THE

FARRIER'S MAGAZINE,

OR THE

Archives of Veterinary Science;

CONTAINING

THE ANATOMY, PHYSIOLOGY AND PATHOLOGY

OF

THE HORSE,

AND OTHER DOMESTIC QUADRUPEDS:

BEING THE

OUTLINE OF A PLAN

FOR DISSEMINATING THIS MOST USEFUL AND NECESSARY BRANCH OF KNOWLEDGE;

Enabling the GENTLEMAN, the FARMER, the GRAZIER, &c. not medically educated, to be his own Farrier; whereby he may practise successfully on the Diseases of his own Animals, when placed in remote Situations in different Parts of the United States, where no regular or scientific Aid can be procured.

COMPILED FROM THE LECTURES AND PRACTICE

Of the Veterinary Colleges of London, France, Germany, Russia, and British India.

WITH

AN APPENDIX

CONTAINING ALL THE COLLEGE FORMULAS.

BY JAMES CARVER,

VETERINARY SURGEON, MASTER OF EQUITATION,

And Corresponding Member of the London Veterinary Medical Society, and the College of India.

PHILADELPHIA:

PRINTED FOR THE AUTHOR.

1818.

Eastern District of Pennsylvania, to wit:

BE IT REMEMBERED, That on the twenty-third day of June, in the forty-second year of the independence of the United States of America, A. D. 1818, James Carver of the said district, hath deposited in this office the title of a book, the right whereof he claims as author, in the words following, to wit:

"The Farrier's Magazine, or the Archives of Veterinary Science; containing the Anatomy, Physiology and Pathology of the Horse, and other domestic Quadrupeds: being the Outline of a Plan for disseminating this most useful and necessary Branch of Knowledge; enabling the Gentleman, the Farmer, the Grazier, &c. not medically educated, to be his own Farrier; whereby he may practise successfully on the Diseases of his own Animals, when placed in remote Situations in different Parts of the United States, where no regular or scientific Aid can be procured. Compiled from the Lectures and Practice of the Veterinary Colleges of London, France, Germany, Russia, and British India. With an Appendix containing all the College Formulas. By James Carver, Veterinary Surgeon, Master of Equitation, and Corresponding Member of the London Veterinary Medical Society, and the College of India."

In conformity to the act of the congress of the United States, entitled, "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned."—And also to the act, entitled, "An act supplementary to an act, entitled, 'An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies during the times therein mentioned,' and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

D. CALDWELL,
Clerk of the Eastern District of Pennsylvania.

☞ *This Work will be published quarterly, in Numbers, containing about* 150 *pages; with Plates, descriptive of all the animals, models of all the College forge instruments, shoes, shod feet, fuller's punches, countersink nails, hammers, &c. with every other necessary requisite for conveying instruction: being descriptive of a plan for teaching and instructing Gentlemen, Country Smiths, Grooms, and Travellers, throughout the United States.*

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ADDRESS.

TO

THE FACULTY OF PENNSYLVANIA,

AND OF THE UNITED STATES GENERALLY.

GENTLEMEN,

THROUGH the great progress which has of late years been made in comparative anatomy, by the establishment of Veterinary Colleges throughout Europe, there is known to be so great a dissimilitude of parts in every species of the animal creation, that it cannot create surprise, to see me dedicate a Treatise on the Diseases of Horses and other Quadrupeds, to those who now stand so pre-eminent as judges of the diseases of mankind. I should not, however, have ventured to have made thus free with your names, if the great desire shown me by the Faculty of Philadelphia to advance my views in disseminating veterinary science, and the good intended in the following work, had not encouraged me to make this address.

Many of the advantages requisite to the obtainment of a skill in this branch of domestic science, have,

I flatter myself, been imbibed from my cradle. Born with a genius turned for studying the nature of horses, I possessed many advantages in early life from the experience of a father, who at that time was a breeder of running horses for most of the nobility in England, as also an experienced agriculturist. I likewise added considerably to my stock of knowledge before I began to travel, by an ardent application to the study of civil and military equitation. But not satisfied, and still irresolute what course to steer, I went to India, and placing myself under a celebrated veterinarian, who had been master of horse to the king, and who was then officiating as master of equitation and veterinary surgeon to marquis Wellesley and the honourable Governor's body guards, I there acquired a very extensive knowledge of the horses and cattle of that country, and some additional information in veterinary practice. But owing to ill health, and various disappointments, I left India, and came to this country with an intention of introducing the art of equitation. Finding the country not sufficiently mature for its admittance, and the door of industry open to every man, I for a time turned my pursuits another way. At length arriving in Philadelphia, and being introduced to Dr. Benjamin Rush of this city, through the acquaintance of Mr. Bradford, attorney at law, my predilection for my pre-

sent studies did not escape the observation of my late and much lamented friend, by whose advice, and the assistance of him, the honourable judge Peters, Dr. Caldwell, Dr. James, professor of midwifery, Dr. Cox, professor of chemistry, general Cadwallader, and the Agricultural Society, I, at the age of forty, turned school-boy to obtain this branch of knowledge scientifically, and proceeded to the *London Veterinary College*, where by the great pains I took to obliterate all the prejudices of my former studies, I hope that my exertions to advance the grand cause of humanity among the brute creation, will entitle me to lay some claim to the confidence and patronage of the public in the publication of this useful work. I have waded through many difficulties in endeavouring to disseminate a knowledge of the veterinary art throughout the union, and my various trials have been arduous and unceasing.

Having pursued my professional studies in England with industry and integrity, according to the plan I originally proposed; and having during my residence there refused a tempting offer of five hundred pounds a-year to go to India, and a still more tempting one of some thousands to go to Russia, I, through the advice of William Allen and John Capper, of the Society of Friends in England, returned to this country to lay the

foundation stone of the veterinary art in Pennsylvania. I hope that the plan I have now fixed on to diffuse the science, will meet with a better reward than it hitherto has done. All I mean by this *new attempt* in travelling through the country on the plan proposed, is to endeavour to be useful in promulgating knowledge, and to contribute *my mite* towards the benefit of mankind and the brute creation.

I am, Gentlemen,

Most respectfully,

Your obliged and ob't servant,

JAMES CARVER.

Philadelphia, July, 1818.

DEDICATION.

TO THE PUBLIC.

THE example of other nations, operating on the good sense of our own having now advanced that to the dignity of a science, which before was exercised but blindly and without principles, and rather to the detriment than advantage of the object it was intended to serve, to the total ruin and destruction of thousands of our finest animals in all our public cities and mail stage departments throughout the United States, it has appeared to the author of this work, that a comprehensive view of all that immediately or collaterally belongs to this branch of domestic science, would be no unacceptable offering to a country standing so much in need of it. Convinced, however, as I am of the extensive utility of the work, being compiled from the lectures and practice of the Veterinary College of London, including thirty years practical experience in different parts of the world, still I have not undertaken it without the invitation of my medical friends. The ob-

solete character of almost every book on farriery which has made its appearance in this country, will certainly make it more acceptable, and the more to be depended on. Aware of the narrow limits to which a knowledge of the anatomy, physiology and pathology of brute animals has, as yet, extended in this part of the world; aware, also, of the imperfect state of those analogies which have been supposed to exist between man and the larger quadrupeds; and sensible of the vague manner in which, under that presumption, veterinary medicines and remedies have been directed; I shall not, I hope, commit myself in this undertaking, though it may be chargeable with some imperfections. Yet, on the other hand, in the prospect that it may become extensively useful in many of the remote parts of the country where no regular or scientific aid can be procured, I am not without encouragement but it will meet the approbation of the public. The sun of veterinary science has already dawned on this happy land, and I am happy in being able to add, that its irresistible beams have already pierced the thick clouds of darkness in which it has, in this country, been so long enveloped. Its approach too has been happily indicated in the labours of two gentlemen now practising this art, (one situated in New York and the other in Baltimore) who breathe a medical atmosphere, and are

imbued with principles which eminently qualify them for this pursuit.

The qualifications and talents, however, of these two gentlemen, although blended with my own, cannot supply the claims of the United States; and surgeons, and gentlemen in the country, still seeing with a mixture of indignation and sorrow the ignorant cruelties practised on their animals by their sooty operators, and unwilling to trust even their dogs to such merciless hands, are led to exercise their own skill on animals belonging to themselves, and the false pride which still restrains them will, I hope, make this work a useful guide and assistant, until the time may arrive when these things may be in a way of better reformation altogether, and the cloud of imbecility which has so long obscured and stigmatised the practice of the profession will gradually become dispelled; and it must be the anxious hope of every liberal-minded good man, that in a few years there may not be a city, town, or country village in the United States, but will boast of a practitioner, whose abilities may do honour to a great national institution. All therefore that I wish to claim, is the merit of good intention, having made the best use of the advantages as well as materials which my studies in the London Veterinary College has afforded me, and the examination of them would admit; and,

under this impression, I confidently rely on the candour with which both will review this first attempt, to unite into one fabric the scattered and imperfect members of a branch of science, universally acknowledged to be as yet, in this country, in its earliest infancy.

J. C.

OUTLINE

OF

DR. CARVER'S PLAN.

EVERY one is aware that till within a few years past the diseases of domestic animals have, in this country, been but little attended to, and still less understood; New York, Baltimore and Philadelphia being the only three cities in the United States that afford the means of relief through the scientific aid of regular practitioners, other cities and towns affording none but through the means of smiths and others.—Again, in trifling and lingering cases, persons wish to avoid the enormous expense usually brought on by a farrier's attendance. Under all these, and various other circumstances, it must at once be evident, that could any means be devised by which the owners of horses and cattle in general could be taught the common operative parts, as well as to distinguish with ease and accuracy the symptoms of one disease from another, it would be a very desirable object: and if to this is add-

ed a ready mode of treating successfully these diseases, unfettered from dryness and difficulty of a regular inquiry, by which persons of the most common capacity would be able to act promptly, without any other aid than this plan affords:—if all this can be effected, I shall be readily believed when I say, that great and lasting benefits may be derived from it.

Now, if what I have stated is possible, I hope to make it appear in the following detail, that in bringing forward this plan, and personally superintending the compounding and preparing of medicines adapted for every case, that I shall be conferring a good on the community at large; and by doing this I hope I shall not be taxed with empiricism, having gone through a regular education at the Veterinary College of London, and having had the experience and practice of thirty years, in different parts of the world, where a knowledge of the horse and other animals could be obtained. I wish it also to be understood, that no medicines shall be made up for general distribution but for such complaints as will in most cases appear under the same form and require the same treatment, in horned cattle as well as in the horse. I shall pretend to few secrets, though the recipes will be compounded and prepared from those medicines which have been tried on condemned animals at the different institutions,

many of which have never before been used, and from medicines before entirely unknown to have any effect or operation on the horse: but in the greater number of instances, I profess only to make use of the best and most generally approved drugs, judiciously arranged, and properly compounded and adapted to act successfully in the various cases in which they may be applied. Lastly I may add, that whenever farriery is as well understood as human medicine is in this country, and practitioners shall arrive from Europe and distribute themselves throughout the United States, then my travels and medicine plan will cease. But until this is brought about, I shall, I think, be rendering and distributing useful information by pursuing the plan I have proposed. Divers other things might be also noticed to illustrate the "*methodus medendi*," but I proceed to state, that it is my intention to travel through the United States, with every necessary requisite and preparation for delivering a Course of Lectures on the anatomy and physiology of the horse, teaching the economy and function of the foot of the living horse, and the system of shoeing as now adopted in the Veterinary College, and in the cavalry of England, Germany, France, Spain, Russia and British India; with models of all the patent shoes, hammers, countersink nails, fuller's punches, &c. &c.

Many of the diseases of the horse and dog are well known to every one; others are more obscure.—Not only, therefore, must medicines be offered for diseases, but the means of distinguishing these diseases from each other must be taught; and it is in this particular that my plan differs from any previous one offered; and it is here that I hope to be more useful, consequently beneficial to myself. To effect this, enclosed with every medical compound I shall offer, will be not only ample directions for giving it, but a complete treatise on the complaint the article is intended for, describing its causes, symptoms, best mode of treatment, not only as far as regards those medicines, but as respects every other remedy that may with propriety be tried, either in preference to my own, or in case of its failure; and this, I presume, an empiric medicine or nostrum never does. But it is evident, that till a particular medicine is bought and those enclosed treatises obtained, a person having a sick animal, may be at a loss what disease to class it under; and even though he should not, some other among the ready prepared medicines might be the more proper; and as such he has laid his money out to no purpose;—so it is necessary there should be some key to the whole, whereby any one may become sufficiently acquainted with the usual appearances every disease puts on, enabling him thereby readily to

distinguish the particular malady his animal labours under; after which he may judge for himself, and either use the ready prepared remedies recommended, which have undergone the test of experiment on condemned animals at the Veterinary College of London, or try others mentioned at large in the description. To this effect this treatise is intended, being the result of near thirty years theory and practice prior to my entering on my professional studies at the above named institution, (a school where, many now living in the city of Philadelphia have been eyewitnesses that my exertions and my studies were arduous and unceasing,) and is composed from the lectures and practice of the college. It will contain,

1st.—A brief description of the body of the horse, illustrated by plates exhibiting all his principal organs.

2d.—An easy and clear account of the various functions of those organs, by which many points in the natural as well as medical treatment become well understood.

3d.—It will proceed to describe, alphabetically, all the diseases to which the horse is subject, with their causes, symptoms, and mode of cure, at large; with a general enumeration of the various remedies in general use for each complaint, at the same time remarking

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on those I would particularly recommend, and which may be obtained ready prepared.

These various subjects will be treated in such a manner as to be perfectly clear to the comprehension of persons not medically educated, and will be divested, as far as possible, of technical terms and medical phraseology. It will comprehend also, the diseases of the Ox, the Cow, the Sheep, and that faithful and protecting animal and companion, the Dog. Here, likewise, I shall point out some remedies, ready prepared, that during a long residence and practical experience abroad, I have used with great success. To teach, therefore, the art of distinguishing the diseases of the horse and other quadrupeds by their symptoms, and thereby simplify the practice and render the cure easy of attainment, is the object of this compendium.

To conclude, the path I mean to pursue is entirely a new one, and to teach it properly there must be a ground work laid down. This I propose to accomplish by giving lectures on Physiology and Pathology; by which means those who wish to be instructed will be first taught to think, and then to act; and instead of having a system of farriery in their pockets it will exist in their minds.

The generality of farriers, grooms, and those pretenders who assume a knowledge of this art, unfortu-

nately are not willing to be put to the trouble of learning, nor to the mortification of owning they need it; hence *they obstinately maintain,* that nothing is necessary but what was known before this art had assumed the form of a science.

ADVERTISEMENT

TO THE

FACULTY,

GENTLEMEN, FARMERS, AND GRAZIERS,

OF PENNSYLVANIA,

AND THE UNITED STATES IN GENERAL.

THE branch of science which I have now the honour to profess in this department of Natural Knowledge, being altogether new in this country, and the *name* by which it is called being but little known, it becomes indispensable, therefore, to communicate, for the better information of the public, whatever may be learned on this head.

Farriery is a name which it derived from the occupation of those who practised it, who were in general *Smiths,* or *Workers in Iron* (*Ferracius*). *Veterinary* is a word derived from the Latin, *Veterinarius:* a term appropriated to express either that part of medicine which regards the cure of animals, or the persons who practise that cure. What the true *etymon* of the word may be, is a question of some philological intricacy, though but of little importance. It is sufficient

here to say, that the word Veterinarius, as used by Columella and Vegetius, signifies a practitioner in one particular part of medicine; namely, that which respects the cure of diseased cattle; and that art, Veterinaria, signifies the art of healing applied to the healing of cattle.

The word hippiatric, is a compound term, formed of the Greek word *hippos*, a horse, and *cutrace*, medicine, which treats of the cure of diseased horses in particular, and constitutes a principal branch of that division of medicine which treats of the diseases incident to cattle in general and to all other domestic animals.

We have undoubted evidence that the art was cultivated in *very early times*. In the infancy of medicine, when the art of healing was confined to the rude elements of Surgery, it was indiscriminately applied to the relief of all accidental distresses to which the animal frame was liable, whether they occurred in man, or in those animals which constituted his wealth, or were the associates of his labours. In these times, many things occurred to attach the minds of men to the well being of their cattle.

They were almost solely used for tillage, and the dairy; and the life and health of the herds was an especial concern. Cattle was the great medium of exchange, before the invention of coin; and the riches of

countries and individuals were estimated by the quantity of cattle and the laws of religion, which religiously forbade the sacrifice of any animal but such as were in the most perfect state of health.

Chiron the *Thessalian*, a person whom antiquity held in extreme veneration, and who, from his transcendent skill in horsemanship, and many other useful arts, was called the wise Centaur, lived at the age of the Trojan war. This great man descends to us as the father of medicine, and the instructor of Esculapius in that art. And he was, on the concurrent testimony of antiquity, profoundly skilled therein, as also in the cure and management of cattle.

It would be to no purpose to trace this art minutely through all its vicissitudes; it is sufficient to say that the decline of the Roman empire, and the decay of arts and sciences, occasioned for some time the destruction of *this* as well as every other branch of knowledge. But while Veterinary Medicine was lost in the *West*, and was declining fast in Greece, it found an asylum among the *Arabians;* a nation destined as it should seem by Providence, to receive in trust the knowledge of Europe, until emerged from the abject state into which it was plunged, it was able to reassume its intellectual rank. It is worthy of remark, that the Asiatics appear to have preserved that part of the manage-

ment of horses, which consists in their treatment when diseased, entirely separate from the business of the farrier; the confusion of which, essentially distinct occupations, has been hitherto the bane of veterinary science among us.—During a residence of fifteen years among the different nations of the East, I have the satisfaction to say I learnt many useful lessons.

The great Lord Bacon, sensible of the services he had rendered to medicine by Zootomy with a view to comparative anatomy, makes the following observation:

"The diligence of Zootomists, says he, may much contribute to illustrate the doctrine of Androtomy, and both inform physicians of the true use of the parts of the human body, and help to decide divers anatomical controversies:—farther, it would be no new thing for naturalists not professedly physicians, to treat of this subject; the naturalist may afford good hints to the practitioners of physic, by trying upon brutes a variety of untried medicaments or remedies, and by suggesting to him both the events of such trials, and also what has been already observed about the cure of diseases incident to beasts.

"The most skilful physicians might also, without disparagement to their profession, do it an useful piece of service, if they would be pleased to collect and digest all the experiments and practices of farriers, gra-

ziers, butchers and the like; which the ancients did not despise, but honoured with the title of Hippiatrica and Veterinaria; and among which, if I had leisure, divers things might be taken notice of, which might serve to illustrate this subject."

These are a few of the sentiments of ingenious men, selected of many; but they are sufficient to prove, that from the period at which veterinary medicine first attracted the notice of the learned, it grew more and more an object of their attention.

I shall now follow the progress of this opinion no farther, but observe, that after a course of many years, the government of France undertook to give effectual assistance and protection to this most useful part of Domestic Science, and to provide for it the same advantages by which medicine had formerly advanced.

It will not be out of place to give here some account of the means which the French government employed, in order to bring about the desirable end; and which so justly entitles France to the same honours with respect to the Veterinary Art, which the world must ever concede to the school of Salerno, with respect to medicine.

Sensible of the advantages which must result from such an institution, government granted a sum of 50,000 livres to defray the expenses—providing a la-

boratory, dispensary, physic, guarding-stables to serve as hospitals, forges, instruments, and utensils; also rooms for study and dissection; in a word, every thing that might render the establishment complete.

The first school was opened in January, 1762. It was very soon filled with native students, and in a short time their numbers were increased by foreigners—supported by the empress queen, the kings of Denmark, Sweden, Poland, Prussia and Sardinia, and the different Swiss Cantons. And within these few years past, Spain, Portugal, Russia,* and all British India, have followed the example.

Dr. Rush, whose heart was ever warm for the introduction of any new branch of science, which might tend to promote the welfare of the animal creation, conversed much with me on veterinary subjects, and laboured hard to prevail on me to establish that pursuit in this city; but not having then obtained it scientifically, I proposed to Dr. Rush and other friends already mentioned, my then intended pursuits at the college—from whence I am now returned and commenced practice.

* The emperor of Russia has lately sent over twelve veterinary surgeons, and twenty-four shoeing-smiths.

HISTORY

OF THE

LONDON ROYAL VETERINARY COLLEGE,

AT ST. PANCRAS.

THE Royal Veterinary College, is an institution first established in the year 1792, at St. Pancras, near London. The public are indebted for this truly national foundation, to the discernment and patriotic exertions of the Agricultural Society of Oldham, in Hampshire. The first professor was Mr. St. Bell, a Frenchman, who had previously signalized himself in this country as a veterinary anatomist, by dissecting the famous horse Eclipse. The college is supported by an annual subscription. The annual contribution is two guineas, but the payment of twenty guineas at once, constitutes a subscriber for life. In some recent instances, the institution has shared the bounty of parliament: an immense saving resulted to the nation from the appointment of veterinary surgeons to the different regiments of British cavalry.

The views and objects of the college appear in the following statement printed by the authority of the governors. The grand object, they observe, is the improvement of veterinary knowledge, in order to remedy the ignorance and incompe-

tency of Farriers, so long and universally complained of. For this end a range of stables, a forge, a theatre for dissections and lectures, with other buildings, have been erected; a gentleman of superior abilities has been appointed professor, with other requisite officers. The anatomical structure of quadrupeds, as horses, cattle, sheep, dogs, &c. the diseases to which they are subject, and the remedies proper to be applied, are to be investigated and regularly taught; by which means enlightened practitioners of liberal education, whose whole study has been devoted to the veterinary art in all its branches, may be gradually dispersed over the kingdom, on whose skill and experience confidence may securely be placed.

Pupils at the college, in addition to the lectures and instructions of the professors, and the practice of the stables, at present enjoy (from the liberality of some of the most eminent of the faculty) the advantages of free admission to their medical and anatomical lectures. These pupils previous to leaving the college, are strictly examined by a medical committee, from whom they receive a proper certificate; and upwards of 500 have been examined and approved, left the college, and are at this time practising in the different regiments of cavalry, and various parts of the country, with great success.

Subscribers have the privilege of sending their diseased animals to the college, without farther expense than that of daily food, and these in general form a sufficient number of patients for the practice of the professor and pupils. On fixed days the professor prescribes for the animals belonging to the subscribers, who find it inconvenient to send them from home, provided the necessary medicines be furnished and compound-

ed at the college. Subscribers' horses are there shod at the ordinary prices. His royal highness the commander in chief having been pleased to appoint a board of general officers, to take into consideration the objects of this institution, and they have reported the continental loss to be very heavy, from the total ignorance of those who hitherto had the veterinary department in the army. This report his majesty approved, and henceforward to qualify for the military service, a veterinary surgeon must be provided with a regular diploma from the college. A number of gentlemen, subscribers to the institution, attend once a fortnight to inspect the discipline of the stables, and see that the regulations are duly complied with.

THE PATRONS OF
The Royal Veterinary College
ARE AS FOLLOW—VIZ.

His Royal Highness PRINCE REGENT, *President.*
His Grace the DUKE OF NORTHUMBERLAND, K. G. F. R. S. F. A. S.

Vice-Presidents.

LORD PERCY,
GEORGE, Earl of Morton, F. R. S. F. A. S.
GEORGE, Earl of Pembroke,
PHILIP, Earl of Chesterfield, F. R. S.
GEORGE, Earl of Macclesfield,

His Royal Highness DUKE OF KENT,
GEORGE, Earl of Warwick,
Sir T. C. BUNBURY, Bart. M. P.
GEORGE HOME SUMNER, Esq. M. P.
THOMAS PELL, Esq. F. A. S.
GRANVILLE PENN, Esq. F. A. S.*

The following gentlemen originally constituted the committee of examiners, for the purpose of granting diplomas to the pupils of the college, when sufficiently qualified to engage in practice.

Dr. JOHN HUNTER,
G. FORDYCE,
BAILLIE,
BABBINGTON,
Mr. ABERNETHY,
Mr. HOULSTON,
CLINE,
A. COOPER,
HOME.

The present examining committee are:

H. CLINE, F. R. S. *President*,
Dr. BABBINGTON, F. R. S.
Dr. BAILLIE, F. R. S.
Sir EVERARD HOME, F. R. S.
J. ABERNETHY, Esq. F. R. S.

* This last mentioned gentleman is of the Penn family of Pennsylvania, and is now living in England. He was the friend and patron of Mr. Charles Vial De St. Bell, the first professor of the veterinary college; a great promoter of veterinary science, and the gentleman who laid the foundation stone of that institution.

A. P. COOPER, Esq. F. R. S.
Dr. COOK,
Dr. PEARSON,
Dr. WILSON, F. R. S.
A. CLINE, Esq.
EDWARD COLEMAN, *Professor*,
WILLIAM SEWELL, Esq. *Assistant Professor, Treasurer and Secretary.*

Among the improvements of these latter times, the extension of a regularly cultivated system of veterinary practice, and the attempts to rescue the superior class of domestic animals from the torturing hand of presumptuous ignorance, are not the least considerable, either in the view of humanity or life.

It is true, that during the various ages which have passed since the days of Columella, the number of writers treating on veterinary science, according to the best medical light which the times afforded, has been considerable; but these works had never any very extensive circulation. Competent practitioners were wanting to put their precepts in force; and diseased animals were either totally neglected, or confided to the unmeaning and capricious efforts of the illiterate vulgar. Entirely to wipe away this opprobrium on humanity and common sense, must infinitely redound to the credit of the present times; and it is consoling to be able to announce, that attempts are daily making towards that beneficent end, by considerate

and philanthropic characters in various parts of our own and neighbouring country.

Ancient prescriptions and a false pride, among the medical faculty, compose the twofold cause which has hitherto deprived our domestic animals of the benefits and comforts of regular assistance. Cattle have always been doctored in every country, either by their attendants or by men pretty nearly on a level with those in point of education, who, on the strength of having learned to perform the most simple and common operations, and from the want of able proficients, have undertaken the arduous task of prescribing medicine. We need not wonder that in former times such professors were held duly qualified, since men impartially committed their own persons to the hands of ignorant barber surgeons, and since so many absurdities of equal magnitude subsisted, which like spectres and ghosts, have vanished at the approach of modern light; but it may well be thought surprising, that in this discerning age, when a liberal education is universally acknowledged to be absolutely necessary to the acquisition of medical science, that an illiterate farrier should be trusted in the cure of diseases. Precisely the same studies, physiological, anatomical, and medical, are requisite for the veterinarian as the human practitioner. The animal economy, in its manifold relations, is generally fundamentally the same in men and beasts, and governed by the same laws; the same materia medica is in a great degree applicable to both; but the greatest skill is requisite, to form a judgment of the symptoms of diseases in brutes, from their inability to describe their own feelings, and the consequent uncertainty of their pathology.

Can there be a greater burlesque than the supposition of a man's ability to prescribe physic for a horse, merely because he knows how to groom and shoe him? or might we not also, with equal reason, employ our own shoemaker to take measure of our health? The plea of experience is futile, from the utter inability (prima facie) of illiterate and uninformed men to investigate the principles of science, and their total want of opportunity to acquire by rote a rational system of practice. The whole stock of medical knowledge of these practitioners, usually consists in a certain number of recipes, derived from their masters or fathers, and on which they continually ring the changes in all cases right or wrong; and so fiercely are they bigoted to their own peculiar nostrums, that they are totally incapable of all advice or improvement—the common and unavoidable fate of confirmed ignorance, since it is the highest point of knowledge, to know that we still need information. They sometimes cure by luck, seldom from knowledge, but often kill by regularly adapted process.—How often has the miserable patient's shoulder been pegged, and blown, and bored, by way of punishment, for the folly of getting himself strained in the back sinews of the leg, or coffin joint! How many pleuritic horses have been killed outright by ardent spicy drenches, which might probably have cured the colic! How many have been rendered incurably lame, from the patent shoe being affixed to the wrong foot!—Let not the reader suppose these to be mere flourishes, applied to the generality of farriers within my knowledge. I aver them, on the experience of many years, to be literal truths; and by the tenor of them, he may judge of the majority of that faculty throughout Eu-

rope. Into such hands do we commit our distempered animals, which have it not in their power to reproach us with their accumulated sufferings; mankind from prejudice, indolence, or want of feeling, neglecting those creatures which they can purchase with their money.

It has been supposed that veterinary writers have been wanting. It was many years ago discovered in France, that the best remedy for this defect, and the only adequate method for the general diffusion of veterinary knowledge, and the rearing of a sufficient number of persons properly qualified in that line, would be to erect public seminaries expressly dedicated to the purpose.

We of this country came (late indeed) into the same salutary measures; and a veterinary college, as an hospital for cattle, has been established in London, and others in various parts of the kingdom. The propriety of these steps, and the benefits derived from them, must be obvious in the extension of veterinary knowledge and the increase of practitioners.

Public institutions, provided they are not unduly favoured with exclusive privileges, or armed with coercive and restrictive powers, are ever most efficacious and contributory to the advancement of science. The scattered rays of knowledge are, by joint and public means, best collected into a common focus or centre, whence they are with more ease and expedition diffused and circulated throughout the whole body of the commonwealth. The veterinary college has also adopted a very judicious method of disseminating the true principles of shoeing, by erecting forges in different quarters of the metropolis, where all persons may at any time have their horses

shod, at the common price charged to subscribers. Prejudice, I know, on more important occasions, has often been trumpeted forth as not only harmless, but beneficial among men; which indeed would be just, were there any general utility in the continuance of ancient abuses. It is the grand business of philosophy, to provide a counterblast for these interested or ignorant trumpeters.

It has already been asked, for the advocates of our shoeing and sow gelding doctors, how they came to suppose, that less medical knowledge would suffice to prescribe for the brute, than for the human animal, who can orally depict his own feelings, and verbally assist the physician in forming a correct judgment of his disease. They seem to act upon the strange supposition, that it is much easier for an illiterate man to penetrate at once, as it were by INTUITION, into the arcana of the sciences, than for a learned or well informed man to render himself skilful in the nature and management of horses. Can a man be the worse farrier for having learned the necessity of making constant observation of his own, instead of acting by rote, and being guided by a few arbitrary recipes; for knowing the nature of the medicines he prescribes, the anatomy and animal functions of the horse, and for making all such knowledge his study?

In fine, all at this moment appears obscured or bewildered, by the ill-placed confidence of the owners of cattle upon the blacksmith of the parish; upon illiterate and conceited grooms, stupid and listless shepherds; or upon a set of men infinitely-more dangerous than all the rest, who, arrogating

to themselves the style of doctors, ride about from town to town, and from village to village, distributing their nostrums, compounded of the refuse and vapid scraps of druggists' shops, to the destruction of thousands, whose varied disorders they treat alike, neither consulting nature or art for the cause or the effect. Miserable animal! bereft of speech, thou canst not complain, when to the disease with which thou art afflicted, excruciating torments are superadded by the ignorant efforts of such men, who, at first sight, and without any investigation to lead them to the source of thy disorder, pronounce a hackneyed, common-placed opinion on thy case, and then proceed with all expedition to open thy veins, lacerate thy flesh, cauterize thy sinews, and drench thy stomach with drugs, adverse in general to the cure they engage to perform.

Opposed to this barbarous and noxious practice, let us turn our eye to that of the veterinary physician and surgeon.

We shall not find him occupying the attention of his auditors with the accounts of miraculous cures he never performed; or, under the mask of sullen ignorance, endeavouring to attract confidence. We shall not see him armed at all points with fleams, rowelling knives, and cauterizing irons, to rack and torment his suffering patients; or with drenches or balls, to obstruct the efforts of nature.—We shall see him with a cautious eye and tender hand, surveying and examining, with discretion and judgment, into the case before him; and as far as he can attain information from those who bring the animal to him, we shall find him an anxious and patient inquirer; proceeding to explore all the external signs, and to observe

with great minuteness every symptom which presents itself; and if he finds them so complicated that he cannot with certainty proceed to give an opinion, he will wait till some new, or more distinct appearances come to his assistance. If, however, these signs should not show themselves, to give effect, he will then apply to the only resource left him, that of compelling nature to develope herself, or, at least, to show some indications. This he accomplishes through the means of medical aid, administered in proper quantities, which, by increasing more or less sensibly, the disease, produces some discovery of its tendency.

Now that witches and ghosts of all kinds are flitting apace off the scenes, it is full time for men to lay aside the expectation of all other uncaused effects. On these topics a celebrated veterinary writer dwells, with peculiar force of illustration, as he says, "from a motive of justice, on account of the irrational prejudice of too many persons concerning the Veterinary College."

"Enjoying a public institution in the metropolis," says he, "where veterinary science in all its branches is regularly taught and practised, it remains for those who interest themselves in the safety and well being of our domestic animals, to devise and recommend the most proper and expeditious methods, of a general diffusion of these benefits throughout the country. The farriers of London were advised, by persons of influence, to allow their sons and apprentices to attend the college lectures which are given, and which indeed is practised by several of good repute. Those gentlemen of the medical profession attending the London hospitals, whose destination

is for country practice, will surely perceive great probable advantage in the acquisition of veterinary knowledge, even if they have no present intention to profess that branch of medicine. Business, as is sometimes the case, with young practitioners, may run short at the outset, and the leisure time might be both honourably and profitably employed in veterinary practice. Such meritorious and humane occupation, could not possibly injure the medical character of a medical gentleman in these enlightened times; on the contrary, it would be more probable to procure him connections of the most valuable sort, and might be his passport and introduction to the families of medical men."

Thus far we have stated the opinions of a writer truly ingenious, and most deservedly popular. Just, however, as are the encomiums of this useful institution at an early period of its existence, yet we are bound more especially to acknowledge the extraordinary progress which this institution afterwards made (and is now making) under its present enlightened and truly ingenious professor, Mr. Coleman. This gentleman, to a natural taste for these investigations, unites a profound knowledge of his profession, as an anatomist and surgeon—a foundation on which the Veterinary Science could not but be erected with singular advantage. That this has actually been the case, our readers must be aware that from the report of 1814, published in London, brought over by Mr. Carver, that not less than 600 students have passed at this institution, who are now attached to the different regiments of British cavalry, and also practising in various parts of the united kingdoms;

besides the different articles in which Mr. Coleman's name and writings have necessarily been brought forward; for which reason we close the present article without entering on those particulars, which it would otherwise have been our indispensable duty to have stated.

THE CHARACTER

OF A

VETERINARY SURGEON.

THE character of a Veterinary Surgeon, in a limited sense, is one who practises the operative part of the Veterinary Art, and whose views do not extend to the treatment of constitutional maladies in brute animals.

The veterinary practitioners in general are named Veterinary Surgeons—and this designation also attaches to those who engage in all the branches of the profession, as they are required in the different regiments of cavalry. We shall devote this article particularly to the consideration of those qualifications which every man engaged in it ought to possess, in an equal degree with those whose conduct and operation are exercised on the human body.

There is undoubtedly no profession in which greater natural qualifications are required than our own. The more liberal nature has been in her gifts, the more carefully the first impressions have been cultivated by rational education—by so much the better will a man be fitted for the practice of it. *Youth, firmness, dexterity, acute sensation, sound judgment,* and *humanity,* are the qualifications which may be considered

as necessary for a surgeon, whether his patient be a *man* or a *quadruped.*

We will begin by observing—that in

YOUTH,

strong impressions are made on the mind, and that he who begins to study on the brute as well as the human subject, from the earliest period of life, will be most likely to acquire reputation.

FIRMNESS,

is the second qualification of a Veterinary Surgeon, and is indeed extended to the mind as well as the body. It implies resolution to go through his operations, however hazardous or severe, undisturbed by any accidental circumstances, unmoved or unawed by the presence of spectators. It also implies presence of mind to determine how to act under all circumstances.

DEXTERITY,

in using his instruments, is also a necessary qualification in a Veterinary Surgeon. It enables him to finish an operation with all convenient despatch, and with the least pain to the patient, whether brute or human.

ACUTE SENSATION,

is extremely necessary also for a Veterinary Surgeon; for how often do instances occur in the acute diseases of the horse, where the nicest delicacy of the touch is necessary to distinguish the true state of the pulse.

SOUND JUDGMENT,

is, on many accounts, of the utmost importance to the Veterinarian. It enables him to form judicious prognostics, by which he may calculate the chances for or against the event of any operation proposed. It is often not less useful in deciding for the patient's possible advantage, than in preserving his own reputation, and keeping up the credit of his art. It also teaches him to determine with precision the time necessary for performing an operation, leads him to the choice of the best methods of executing it, or perhaps furnishes him with the *more laudable* and *happy contrivance* of recovery of his patient by more gentle means.

HUMANITY,

is the last qualification mentioned as necessary for a Veterinary Surgeon; and though last, not the least important and laudable.

This indeed is the cardinal qualification of all; it reflects a lustre on the rest, and completes the true character of the man as well as of the surgeon. The exercise of it is required in two ways; first, humanity in operation, and secondly, tenderness in our subsequent treatment. Humanity in operating, should induce us to put an end to our patient's sufferings, (whether brute or human) as soon as we can, and also to perform this severe though necessary task after such a manner as shall be attended with the least possible degree of pain, besides the pleasing satisfaction resulting to ourselves, of having done our duty when actuated by such motives.

Tenderness in our behaviour to the brute creation, needs not an argument to enforce its necessity—it being no less honourable to feel for them than ourselves; and surely the distresses of brute creatures, and the pain we are often obliged to inflict upon them, is sufficient to soften the hardest heart, and to raise the emotions of compassion within us towards those *mute sufferers* who have toiled in our fields, and lent the labouring hand to help build our cities and our churches.

When dressings are either removed or applied, it should be done with a gentle hand, and in a manner which would convince the bystander that it is not the veterinary surgeon's intention to give pain, even to the most inferior animal, if he can avoid it; while a contrary conduct to this may ever prove an obstacle to his success in life; for cruelty will increase by habit, and at length render his manners coarse and offensive, even to those on whose liberality the emoluments of his future practice may in a great measure depend.

We shall now come to consider the *acquired knowledge* necessary to make a good veterinary surgeon. On this point we shall make one general observation, to wit: that the more extensive and universal a man's knowledge may be, from having made these his pursuits and acquirements in various quarters of the globe, (and which the writer has had every opportunity of obtaining from early life) the better fitted will he be for the exercise of his profession. But, not to alarm young persons by considering the subject too extensively, or by a vain display of science, it is necessary here to mention that knowledge which it is absolutely necessary they should acquire. If they are as conversant as they ought to be, in the matter proposed

to their industry and application in this work, the knowledge they will then have obtained cannot but raise a spirit of inquiry in their minds, which will lead to more important exertions.

The next and most important acquisition is a knowledge of the *power and properties of Medicines.* The various substances of the materia medica—the different classes of the *vegetable, mineral,* and *animal* kingdoms, so far as they relate to physic, supply all the several applications used in *Veterinary Surgery.* If, therefore, we are ignorant of the qualities of these substances, we may commit the greatest mistakes in the use of them. Instead of an emollient we may apply an escharotic, and instead of a stimulating application, we may perhaps prescribe a sedative.

Without this knowledge, it is impossible to practise our profession with any degree of credit or success; though by some it may possibly be argued that we should have learned these things equally from experience. Nothing therefore can be more necessary than a knowledge of the *Materia Medica,* and consequently of *Veterinary Pharmacy*—which is nothing more than a knowledge of the art of mixing and compounding the several articles of the *Veterinary Materia Medica,* so as to produce a combination capable of effecting what cannot be done by any solid or fluid substance *singly.*

The last point to be insisted on, as demanding our particular attention, is the study of anatomy. The body of the *Horse,* the *Cow,* the *Sheep,* and the *Dog,* being the subject of our operations, how shall we be able to perform them properly, if we are ignorant of the construction of the machine on

which we are to work. *A complete and thorough knowledge of Comparative Anatomy*, it is therefore absolutely necessary to acquire; and the method to be pursued, in order to acquire this knowledge, must be the work of our own hands in the *dissecting rooms* of those institutions established for that purpose, in different parts of Europe. Mere oral instruction is not sufficient. We may attend the most ingenious and instructive lectures in anatomy of the *human subject*, without being fitted for the exercise of our profession. It is therefore necessary to dissect, to trace, and inspect, the several parts of animals with our own *hands* and *eyes;* and this with care and industry.

COLLEGE CERTIFICATES.

Veterinary College, July 12, 1815.

These are to certify that Mr. J. Carver has attended the Veterinary College as a resident pupil for three years, and having been examined by us, we consider him as qualified to practise the Veterinary Art.

HENRY CLINE, *Surgeon,*
WILLIAM BABINGTON, M. D.
ASHLEY COOPER,
J. COOK, M. D.
G. PEARSON,
HENRY CLUI, jun.
EDWARD COLEMAN, *Professor,*
WILLIAM SEWELL, *Ass. Prof. & Treas.*

Theatre of Anatomy, Physiology, Pathology and Surgery, October, 1815.

By Mr. Wilson, Mr. Charles Bell, and Mr. Brody.

This is to certify that Mr. J. Carver, veterinary pupil under me, has attended a course of lectures on the human subject, and chemistry under Sir H. Davy, jun.

EDWARD COLEMAN, *President,*
WILLIAM SEWELL, *Assist. Professor.*

Royal Veterinary Medical Society, July 12, 1815.

We hereby certify that Mr. J. Carver is a member of the London Veterinary Medical Society, and that his observations have contributed to the advancement of veterinary knowledge.

Signed by order of the Society,

EDWARD COLEMAN,
WILLIAM SEWELL, *V. P.*

S. DUFFIELD, *Secretary.*

To Mr. J. Carver, V. S.

The above veterinary diplomas have been examined and approved by the President, Vice-President, Secretary and Members of the Philadelphia Agricultural Society.

R. VAUX, *Secretary.*

AN

ADDRESS

TO THE

STUDENTS OF MEDICINE,

OF THE

UNIVERSITY OF PENNSYLVANIA.

GENTLEMEN,

It is now fifteen years since I first commenced the arduous undertaking of endeavouring to lay the foundation stone for the better introduction and dissemination of the practice of the Veterinary Art in this city; but owing to the death of our late and much to be lamented friend and patron of medicine, Dr. Benjamin Rush, together with a variety of other causes, I have not been able to fulfil the wishes and desires of a mind naturally bent for these pursuits. I have, however, in some former publications, endeavoured to draw your

attention to the subject now before you, with an intention of opening a school of instruction to a course of private lectures on the anatomy, physiology, and pathology of the horse and other quadrupeds, by which means this useful and necessary branch of science would gradually have became dispersed throughout our union, and whereby you would have been rendering yourselves useful in your respective neighbourhoods, by receiving instruction on those heads, and thereby learning how to perform a few useful operations, as well as the administering of medicines where no regular or scientific aid could be procured.

Sensible of the advantages that might have been made to result by obtaining a small share of knowledge in comparative anatomy, you would have been enabled in this way without disparagement to your own profession, to have rendered a useful piece of service to yourselves as well as your country; but from circumstances unavoidable, my pursuits are now turned into a different channel, and I shall thereby endeavour to fulfil this task myself, by travelling through the country. If, however these pages should fall under your eye, let me entreat that you follow me attentively through them, and not be deterred from investigating them; by which, perhaps, each succeeding day of study will

open to your view, a new intellectual ray of light, in researches perhaps hitherto unknown to you, and each new fact will forcibly impress itself on your minds—until that which was begun with a dread of being styled a horse doctor, will end in pleasure: for it is by a due and proper acquirement of some of these important branches of new medical information, that you may hope to build some reputation in veterinary knowledge, as a guide in your future professional pursuits.

For more than five and twenty years I have studied the veterinary profession, though not scientifically until I entered on the pursuit at the Veterinary College of London, where, by strict attention, I flatter myself I acquired some knowledge of it. I therefore, from the best of motives, invite your attention to the pages before you, under a hope that the information contained therein may, to some of you, at least prove a pleasing task.

In the descriptive detail of the different diseases, and their modes of cure, I have carefully avoided theory alone, and endeavoured to join cause and effect, and blend the reason with the act; whereby, attempting to teach the curative art by principles more than by recipes, and the matter so conducted, that the amateur who chooses to strip it of its systematic and artificial

dress, may find in the work a ready and safe guide which will not lead him astray; and though I have borrowed some matter, that which is my own will stand in no fear of contradiction.

I am, gentlemen,

Very respectfully,

Your obedient servant,

J. CARVER, *V. S.*

A

TREATISE

ON THE

VETERINARY PATHOLOGY

OF THE

DIFFERENT LAMENESSES

TO WHICH THE HORSE IS SUBJECT.

A

INTRODUCTION.

OF all the quadruped animals, the Horse seems not only the most beautiful, but the most useful to the service of man; and, as no labour can be done, or business carried on, but by the assistance of this noble animal, he certainly claims our attention, to relieve him from the different lamenesses and infirmities to which we expose him, by reducing him from a state of nature to a life of art; for a horse in town, and a horse in the country, is, in many respects, no longer the same animal. These circumstances considered, we cannot pass over, without some attention, the merit his services deserve. We shall endeavour, therefore, to proceed to the cause, progress, treatment and cure of his diseases: such as *Corns—Quittors—Sand-cracks—Thrush—Grease—Spavins—Splints—Curbs—Ring-bones—Sprains*, and *Wind-galls;* to which the legs and feet of horses, from bad shoeing and mismanagement are so subject.

Lameness, signifies any disease or complaint of an animal, by which a free progression of his movements are impeded.

The steps of a horse in a sound state are equal and uniform, constituting a certain harmony subsisting in the movements of his whole body and limbs; any deviation therefore from this harmony, or defect in the moving his legs, constitutes lameness. Various are the causes which may occasion this, and frequently a combination of causes may take place at one and the same time, in different parts of the same limb; for instance, a prick from a nail in the foot, a strain in the tendons of the leg, the ligaments of the joints, or in the shoulders, frequently happen together; for as the pain arising from the prick, in the sensible lameness of the foot, causes the horse to trip and stumble, an exertion to save the pained foot may, and frequently does, occasion the straining of the ligaments of the joints or tendons, &c. of the legs; and thereby a combination of causes of lameness are produced.

The same effects are likewise produced from bony excrescences on the legs, occasional pain, or even an exertion of the animal to save the pained limb in such a case, may occasion the straining of some of the muscles in the shoulders; though lameness in this part seldom or ever happens to this bone, from the nature of its strength of structure and junction with the ribs; for the scapula is not fixed to the body, like many other parts, by joints, but by apposition; that is, laid

along the outside of the ribs, and there fastened to, by the muscles, &c. which lie both on inside and outside of the shoulder blade: hence, though the muscles and tendons of the shoulder may sometimes be overstretched or strained, the bone can never be slipped out (as many, from want of a knowledge of its structure, often think it is) without force sufficient to destroy the texture of the parts which connect the latter with the ribs. It is true, that the ligaments which surround the articulation where the humerus joins with the scapula, at the *point of the shoulder*, is exposed to considerable injury from strains, &c. as is the case with other joints; and I have repeatedly heard professor Coleman say, as well as Mr. Bracy Clark, that they never knew or heard of a single instance of its being dislocated in a horse, though it must be allowed that the thing is possible: hence therefore it is, that not one lameness of a thousand, which, by the ignorant is pronounced lame in the shoulder, but that it is in the foot or feet, and not in that part.

Lameness also frequently proceeds from tumours or enlargements growing upon the bones of the legs of horses. These are commonly termed splints—spavins—wind-galls—ring-bones, &c. as is seen and represented in the different plates of this work, and which are distinguished or named from the *particular part*

on which they grow. But as these bony excrescences, or exostoses, as they are called in human pathology, are not limited to any part of the leg, as in some cases only, and are likely to grow on other bones, they are sometimes concealed in some situations impossible, except by dissection, to be discovered.

It sometimes also happens, that the exostoses or enlargements take place on the small bones of the joints, especially on those of the hock, the osseous matter forming a number of small tumours between the joints, and thereby cement two or more of those bones together, which, by impeding the action of the joint, causes permanent lameness.*

Many persons think and flatter themselves that they can cure these bony excrescences, by blistering, &c. even after they have acquired their utmost solidity. But those who are better acquainted with anatomy and structure of parts, will never make any

* This was the case with Old Messenger, who threw out a ring-bone when a colt of two years old, and which was the occasion of his coming to this country. This never being properly attended to, it became ossified, and produced ring-bone or ancalloses of the joint. This circumstance cannot be doubted, having the *bone now in my own possession*, which was dug up on Cock farm, on Long island, last summer, where *he died, in the presence of Mr. Cock and others*, some years ago.

such absurd assertions. I cannot forbear in this place to remark, that it is positively asserted that a celebrated self-dubbed veterinarian of the present day, and now in this city, does positively assert that he performs a cure of this disease by chiselling off the part, or rather the bony enlargement, from the main bone. How weak must that man be, who will so foolishly expose his ignorance of anatomy by such an assertion, being a flat contradiction to the nature of things. It is true, that in some cases, where the tumour has a very narrow base, it may be taken off with a chisel; but it must in all cases where it is done, not only be attended with serious and dangerous consequences, but much more detriment and injury to the horse, than the excrescence would be, if left in its fullest growth: indeed a caries of the bone must take place, and the cicatrix that remains must disfigure the horse more than the bony excrescence would have done in its fullest extent. Splints of uncommon size we daily see on horses' legs, yet they do not go lame; hence, therefore, it is obvious it is not the size of a splint that causes lameness, after it has grown to the full extent, but rather its interference with other parts that are subservient to the motion of the legs. As I have attacked the professional talents of a man, who, having assumed to a knowledge of a profession

he cannot, from the very nature of his education, have a proper knowledge of what he aspires to, (a Veterinary Surgeon and Professor of Animal Medicines,) I deem it my duty to advocate the cause of truth, as it may be the means of saving some poor animal from his hands. Having made this bold assertion, and that before a body of scientific men, whose talents and knowledge of anatomy of parts are too well known and established to need any encomium of mine, I deem it therefore my duty to explain the nature of this chisel operation, and the impossibility of its being performed without injury to the animal. Caries, therefore, of a bone, is meant to *abrase, dig,* or *cut* one bony excrescence from another; the consequence of which is nothing more than a partial mortification of the bone, which separates the bond of union from the sound part, sooner or later. Dr. Hunter, Dr. Munro, Dr. Cullen and Dr. Coleman term every species of caries attended with loss of substance an *ulcer;* and this corrupted state of the bone happens when it has lost its living principle, which must be the case in the loss of the periosteum, from which cause, having lost that supply of natural colour, it becomes yellow, brown, and at last, when approaching to mortification, black. This, when the bone is corroded, causes a discharge of sanies which consumes the adjacent flesh, and by causing inflammation of the

surrounding periosteum, causes great pain to the animal. I now wish it to be understood, that the attack I here make is to expose error; not upon the person, but upon the erroneous opinion and practice; for we should war against error in our brother as against our enemy, when it is the cause of truth we seek, and no personal motive influences us.

It likewise frequently happens, that these excrescences grow between or upon the large and small metacarpal, or cannon bone of the fore legs, and sometimes immediately under the tendons: the grooves or hollows that are thus formed on the surface of the enlargement, whilst it is in a hard state, by the friction of the tendons, evidently show that they have been impeded in their motion. In this situation, and under these circumstances, it becomes impossible to remove the ossific matter from the bone. It also frequently happens, that the legs become considerably enlarged; a case for which there is no cure, as will be evident by inspecting the bare bone, which may be found on every field or common where there are dead horses.

The same effects are also produced by those bony enlargements growing on the leg bones of horses, called splints, of which we shall speak more fully hereafter under their proper head.

Lameness also proceeds from rheumatic pains in different parts of the body, which frequently change from one part to another; also from cramps, spasms, &c.; all of which produce lameness, the true seat of which cannot be ascertained with any degree of certainty. Other causes of lameness are more easily discovered from their external appearance, or the symptoms which attend them.

Lameness also proceeds from contusions occasioned by blows; from wounds or punctures; sores upon the heels; and from what is called the scratches, salanders, and wallanders, &c. under every denomination whatever; as in all these cases the parts are more or less swelled or inflamed, and, of course, unfit for action.

Lameness will proceed also from too violent and long-continued exercise, which creates too great a waste of the synovia of the joints; hence they become stiff, and on the horse's moving, make a crackling noise.

The same effects are also produced from a variety of other causes, which are confined to the feet—as pricks from nails in shoeing, wounds in the hoofs from nails picked up in the street, glass, sharp-pointed bones, and other foreign substances, which often penetrate to the sensible parts and cause lameness.

Lameness is also often produced from contractions —from Thrushes—from Corns—from Quittors—from Sand-cracks—from paring the hoofs and sole too much, which causes all these complaints, and which will be more fully defined and treated of, under their several and proper heads.

There is also another kind of lameness peculiar to the hind legs, and which occasions a sudden jerking of the leg upwards, by many called string-halt. This complaint seems to be a particular affection of the nerves of the leg, which causes this involuntary motion, and for which it is a folly to propose a cure. I have never found it but in the best bred horses; and although people make it an eyesore in purchasing a horse, it is seldom or ever found to lame them, or impede their going. On the contrary, among the nobility of France, and those who frequent much the parade or menage, those horses are sought for, and even purchased at a very high price, but more particularly so when this affection belongs to both legs.

From all these, and a variety of other causes, lameness is produced; the true seat of which, in many cases, cannot be discovered by external appearances. Practitioners ought, therefore, to be very cautious in speaking of the causes of lameness, before they have positively discovered the real seat of the disease, or

become acquainted with the circumstances which produced it. From a neglect of this precaution, together with a want of anatomical knowledge of parts, which cannot produce any thing else than a false and hasty determination as to the real seat of the lameness, applications are often made to the sound parts, and the patient's shoulder is pegged, blown and bored, by way of punishment for getting himself lame in the back sinew or coffin joint. How many pleuritic horses have been killed outright, by the cordial and spicy drenches which, probably, might have cured a colic!—and how many have been rendered incurably lame from the shoe being fixed on to the wrong foot—whilst the real cause has soon afterwards shown itself to the shame and confusion of the practitioner.

The cautions here pointed out, will no doubt appear the more necessary, when the real importance of the circumstances are properly considered, that all bony enlargements or excrescences always occasion the most severe pain to the animal whilst they are growing, which by the effect they produce in extending the membrane, or periosteum, that covers the bone, and which under certain circumstances is always more or less attended with inflammation; and I do not know of a more proper analogy, than comparing them to teething in children, which continues till the perios-

teum which covers the jaw bone is penetrated by the new tooth coming through.

Another cause of lameness also, which we have not yet noticed, is the injury done to horses' backs by pads and ill-made saddles, not properly fitted. I must notice also the extreme carelessness of nineteen persons out of every twenty who travel in this country, in not attending to the cloth that contains the padding or stuffing of saddles, which is generally made of coarse materials, and very often of canvas. Can any thing be more absurd?—such a covering cannot but from the friction it produces on the skin create sores and tumours of different kinds, which are very often attended with serious consequences, being extremely difficult of cure. Hence also, very large swellings are produced on the shoulder or withers, which terminate in fistulous ulcers, and which from their situation, being in want of a dependent orifice or drain, when suppuration takes place, produce evils not easily remedied; the skin becomes bruised, and hard lumps called warbles and sit-fails, render the poor animal's back tender for a long while. How often are travellers put to serious inconveniences and delays on the road, when by a trifling attention to these things they might have been avoided.. How easy for a traveller, when he arrives at his journey's end, to place his saddle in the sun to dry,

and before he mounts again, to have it scraped and made free from dust and dirt. However, persons who travel much on horseback, should always carry with them two saddle cloths, and these should always be made of the very best and finest serge, keeping one in his saddle bags to shift and change as often as necessary. Would not such a precaution be attended with more beneficial effects, by preventing the evil, than by travelling on till you produce one, and then be at the additional trouble of learning how to cure it?

The specific diseases which we have thus taken a pretty general view of, shall now be treated of under their several heads.

A

COMPARATIVE VIEW

REPRESENTING THE

DIFFERENT DISEASES

TO WHICH THE

LEGS AND FEET OF HORSES ARE SUBJECT.

OF BONE SPAVIN.

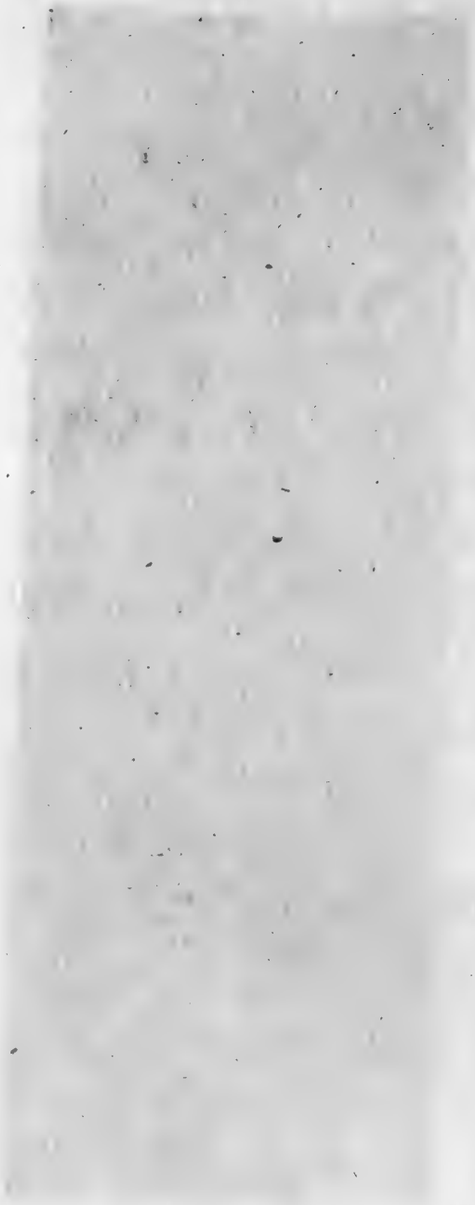
Fig 1. *letter B.*—Represents a bone spavin on the inside of the lower part of the hock, and upper end of the cuneiform bone of that part.

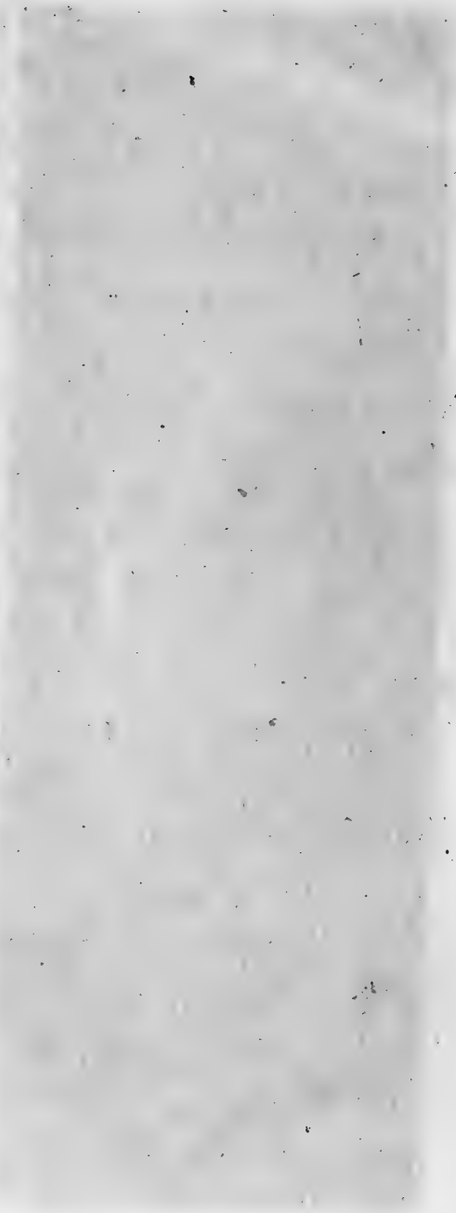
A BONE SPAVIN is an exostosis, or bony enlargement, entering into the formation of that part called the hock, or some part of the metatarsal bones. Its situation is not definite, but is most frequently on the upper part of the minor metacarpal (or cannon) bone. When it has the former of these situations, corresponding to splint before, it often arises from raising the outer heel by calkings; and in what are called cat, caw, or sickled-hammed horses, it is often brought on by this natural deformity; but more frequently the latter cause produces it,

when on the inside of the hock. A spavin that begins on the lower part of the hock, is not so dangerous as that which puts out higher, and comes in contact with some of the small bones of the os calcis. A spavin near the edge is not so bad as that which is more inward towards the middle. From the union of the small bones, which are six in number, composing the os calcis, the elasticity is lost, and lameness must be the consequence; besides it must, as we have before observed, interfere with the ligaments, and not unfrequently with the lesser flexor tendon, producing not only an additional pain, but additional lameness.

Treatment and Cure of Bone Spavin.

Various are the prescriptions laid down for the treatment of this complaint; but unless a person has attended in the dissecting room, and noticed the morbid appearance of the parts after death in this disease, he cannot be aware of the great thickening and disease the ligament takes on, as well as the bones, when bone spavin has existed for some time. It appears that this is sometimes the effect, and may probably sometimes be the consequence of the enlargement of the ligament brought on by spavin. And when the inflammation is from neglect suffered to go on, it generally communicates to the neighbouring soft parts, and by this means the periosteum, cellular membrane, ligaments and muscles, are changed into, and increase the size of the bone. In its original state, when first thrown out, it is similar unto the glutinous sub-





stance of an egg, but in its further and more aged state it is called the adhesive ossific inflammation.

Cure.

The successful treatment and cure of this disease depends much on its being attended to soon after its first appearance; for where the bony matter has been deposited, it becomes so hard and ossified, and so much a part of the organ itself, that it is difficult to stimulate the absorbents to remove it. In its incipient or first state, extensive blistering will be found sufficient, as it will stimulate both the ligament and the absorbents of the bone likewise; and if necessary must be repeated. But in its more advanced state, before it may have become bony, firing will be found necessary, and the blister well rubbed in upon it. By this means, calling all the powers to act at one and the same time, a cure may be performed.

The blister I would recommend is the following:

Take Muriate of Quicksilver (corrosive sublimate) . . . . . a scruple;
Spanish flies . . . . . 4 drachms;
Venice turpentine . . . . . 3½ drachms;
Lard . . . . . 4 ounces.
Mix.

When this has been applied, and the parts nearly healed, it may be repeated, if necessary, at the end of eight or ten days, avoiding such a degree of violence or irritation as may

produce a loss of hair, which in the first instance must always be cut off. But where a horse cannot have his regular treatment, being wanted for work the whole time, the following liquid blister may be applied:

Take Spanish flies (cantharides) in powder, 1 ounce; corrosive sublimate, 10 grains; Venice turpentine and sweet oil, each 2 drachms, melted together over a slow fire; add 4 ounces of the spirits. *Mix.*

Rub the part slightly, night and morning, till some running is produced, then desist. It is necessary to caution here, that although the liquid blister is recommended under the circumstances laid down, of the horse keeping at work, absolute rest or confinement in a large stall or paddock is always the best; and if you ever should apply a blister over the fire immediately after, be sure never to apply it to more than one leg at a time. The irritation produced by both being applied at the same time, might cause the death of the animal; but without the fire or actual cautery, no danger is to be apprehended.

OF BLOOD SPAVIN.

Fig. 1. *letter a.*—Represents the inside of the hock, with the Varix, or Blood Spavin, and as the distended vein appears in that disease.

Blood Spavin and Bog Spavin are synonymous. Blood Spavin is a dilatation of the vein, or an encysted tumour, that

runs along the inside of the hock, forming a soft swelling in the hollow parts, and is often attended with a weakness and lameness of the hock. This enlargement seldom takes place in any other part of the horse, as his superficial order is comparatively small, and not subject to such artificial pressure as our own: it is improperly considered as a disease, being only the effect of another and distinct affection. For it is affected merely from passing over the mucous capsules of the hock, which becoming enlarged, press on the vein, occasioning a passage for the circulation of the blood, and a consequent dilatation of its coats. Usually, therefore, the dilated capsule is the part to be attended to; but when the vein becomes so enlarged, as by its own pressure to occasion mischief, it can only be removed by counter-pressure, or by blister and fire.

ENCYSTED TUMOURS,

OR

DISEASED ENLARGEMENTS OF THE BURSÆ MUCOSÆ,

ARE

WIND-GALLS.

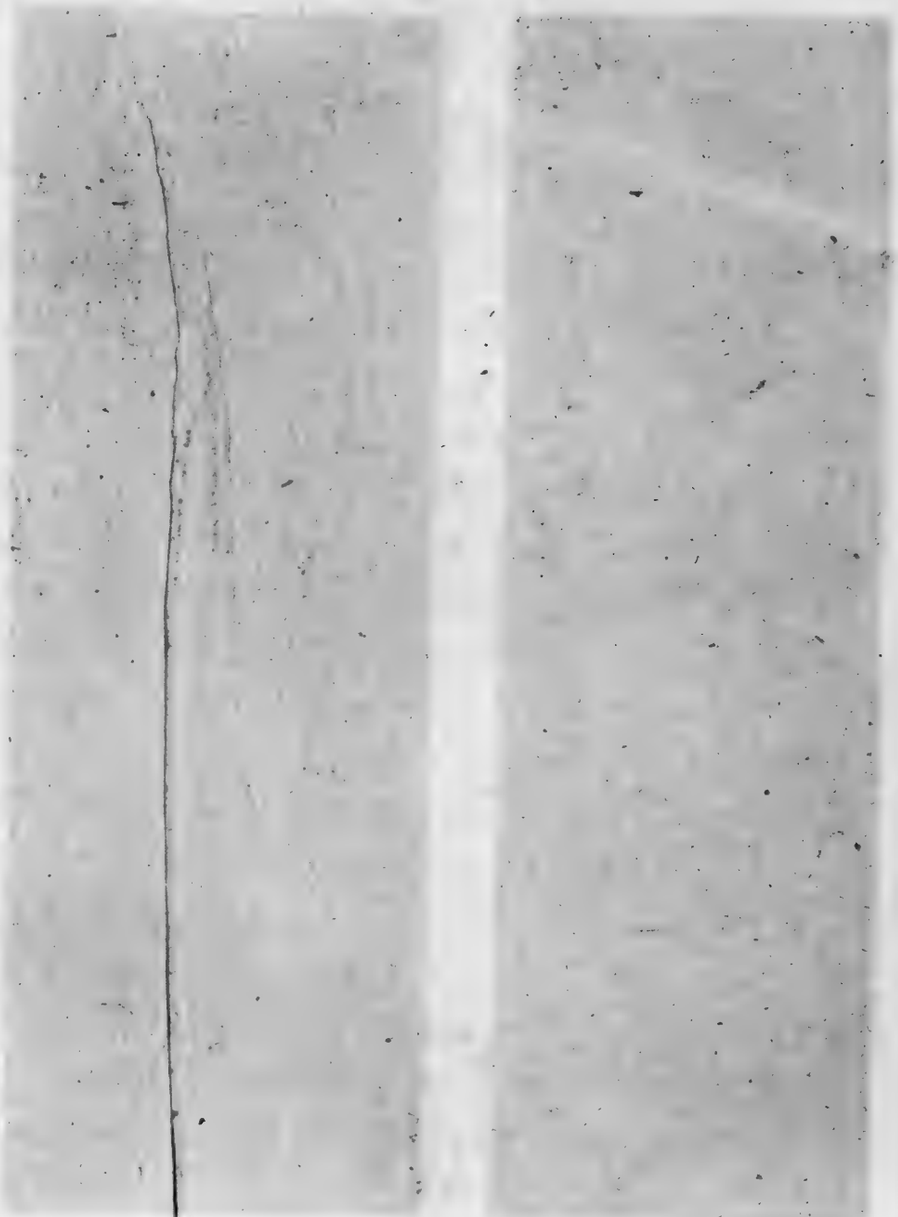
Fig. 7. letter a.—Represents Wind-galls, or Encysted Tumours, that appear on the fore leg.—*a, b,* two Wind-galls that sometimes arise under each side of the knee.—*c,* a Wind-gall on the shin, between two muscular tendons, a little above the fetlock joint.

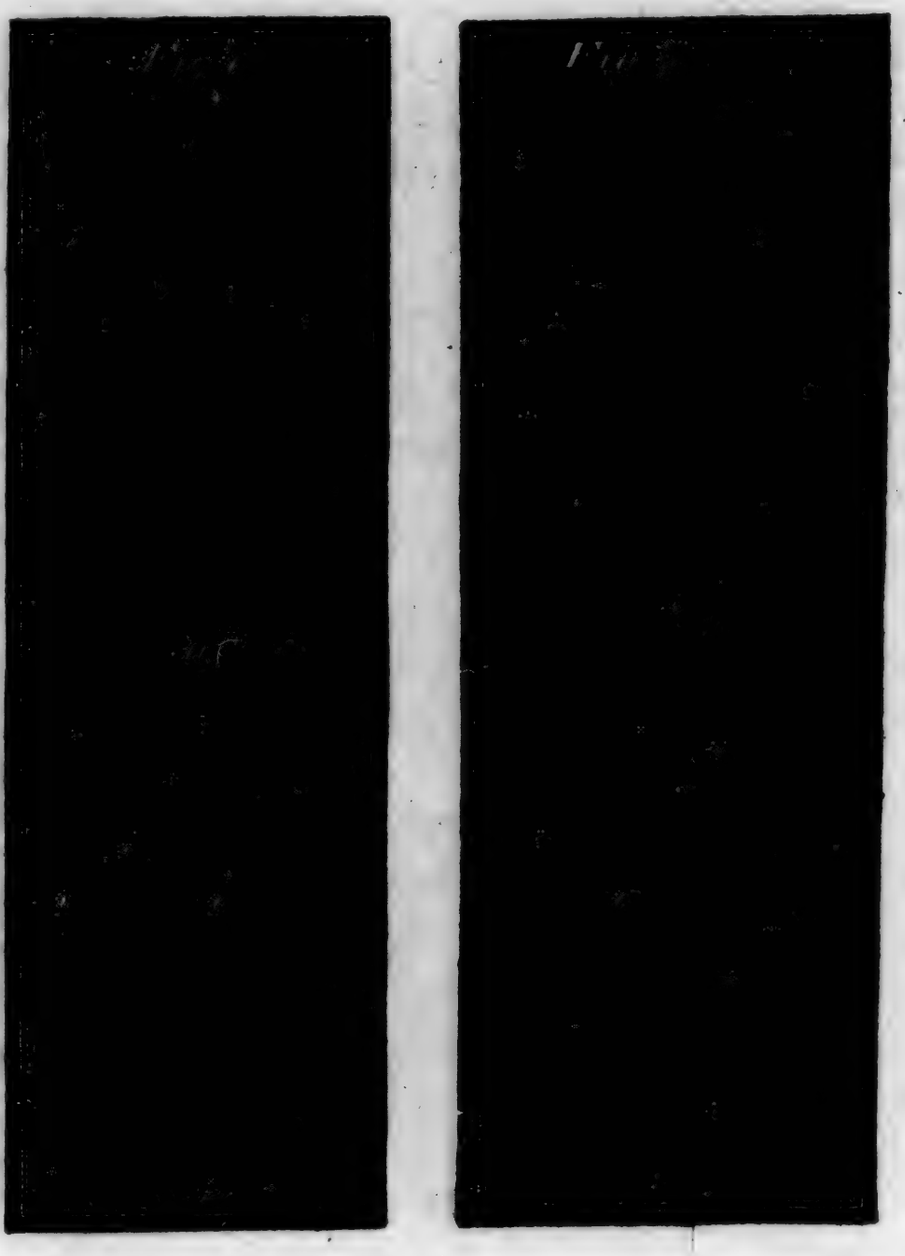
Fig. 8.—Shows Wind-galls on the hind part of the fore leg.—*a*, an uncommon one above the knee.—*b*, a Wind-gall under the knee behind.—*c*, *c*, the common and usual Wind-galls on each side the back sinew.

WIND-GALLS are a puffy kind of swellings, or tumours, which yield to the pressure of the finger, but on removing the finger recover themselves and push out as before. They have thus been named from a false notion handed down by Jack, Tom, Dick and Harry, that they contain wind or air. These tumours are often seated on both sides the back sinew of the horse, on or a little above the fetlock joint, but more frequently on the hind legs. They are quite loose and detached from the feet on which they grow, and exhibit the same signs wherever they are met with, whether in the hocks or about the knees; for these swellings are not confined to the lower limbs only, but appear on any of those parts where the cellular membrane can be separated; and although an eyesore in the purchase of a horse, they for the most part exist without occasioning pain.

Wind-galls are usually caused by riding on very hard roads, or on dry hilly grounds; sometimes by working horses too young, before their limbs have grown sufficiently firm and vigorous to support their labour. At first they are small, but sometimes grow to the size of a pullet's egg, and push out on each side of the hollow of the hock, called Thorough-pin.—Swellings of the same kind also appear on the front of the knee in the interstices of both sides of the joint, are also dangerous, and usually caused by some violent strain.

The other flatulent swellings which horses are subject to





seldom cause lameness, and are for the most part easily cured by the application of a mild blister. I mean those that happen in the interstices of the large muscles of the hip and thigh, which are generally distended like little bladders filled with air. They come by strains and over exertion, for draught horses are most subject to them.

Wind-galls that proceed from hard work or other causes, are more easily prevented than cured—by not travelling so much when too young, and with heavy riders, before they come to their full strength. On their first appearance, if the swellings ascend towards the knee, bathe them well with old verjuice or some strong astringent. This with the application of pieces of sheet lead, and a firm bandage, *put on dry*, and afterwards wetted, which adds to the pressure, will, in their incipient state, generally produce a cure. But when they are grown pretty large and feel indurate, if on the hind legs, it is hardly worth while to meddle with them.

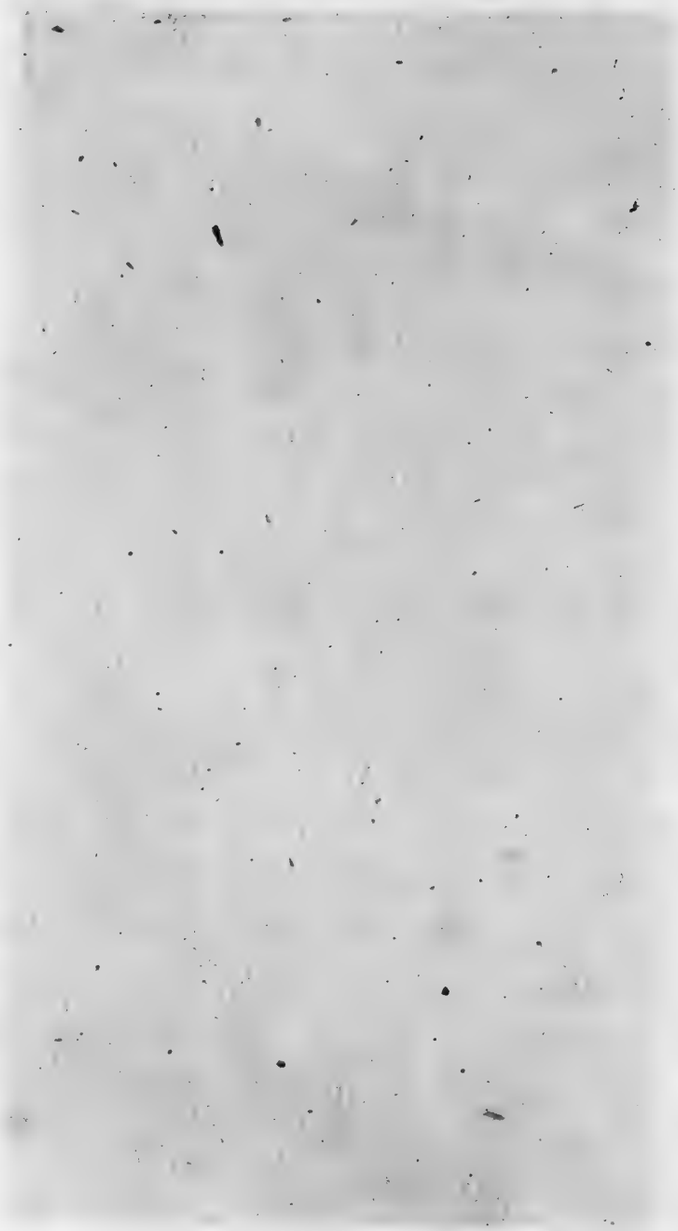
These vascular bags, when distributed about the joints, come more into notice than others. There is a sympathy between the parts which brings them into action to supply accidental wants and deficiencies; hence it is, that increased exertions in the tendons produce increased secretions of this mucus, and this the more as by exertion a greater determination of blood is secreted; and thus it is that Wind-galls are universally the attendants of hard labour.

Cure of Wind-galls.

In the cure of Wind-galls we must attend to three particulars: 1st. The removal of any diseased alteration they may

have occasioned—2d. The removal of their distention, and the prevention of its recurrence—3d. Stimulating applications are the most likely to remove the coagulated deposit. The sweating blister before recommended is a very proper application for this purpose. But to promote absorption of the contents of the Wind-gall, pressure, as before recommended, generally proves the most efficacious, applied in the form of a bandage, with bolster or compress on the immediate swelling. When Wind-galls have been removed in this way, firing is the best means of preventing their return.

I cannot dismiss this subject without warning the junior practitioner, never to be incautiously led to puncture a Wind-gall, Blood Spavin, or indeed any of those bursal enlargements forming *Varix*, under the idea of evacuating its contents; for if even no mischief follow, no good can possibly result, as the cyst would be only momentarily emptied, and its capacity remain the same, by being again filled by the exhalent arteries, and inflammation of the most serious kind would be sure to follow. Horses have even been destroyed by such ignorance, and even when they are not serious they most generally end in *anchylosis;* and when by any other means such an accident should happen, through the ignorance of a smith, the owner should immediately close the wound by the heated budding iron, in the same manner as in open joints. Bursal enlargements, or Wind-galls, bear different technical names, according to their situations.



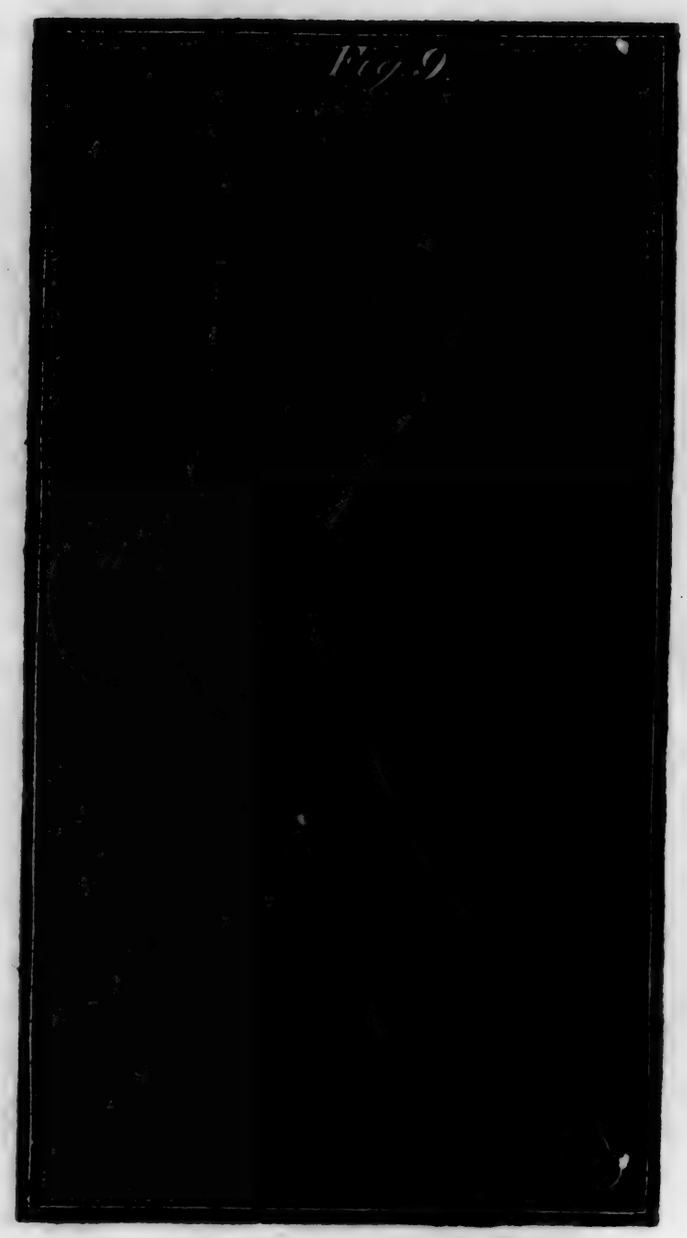
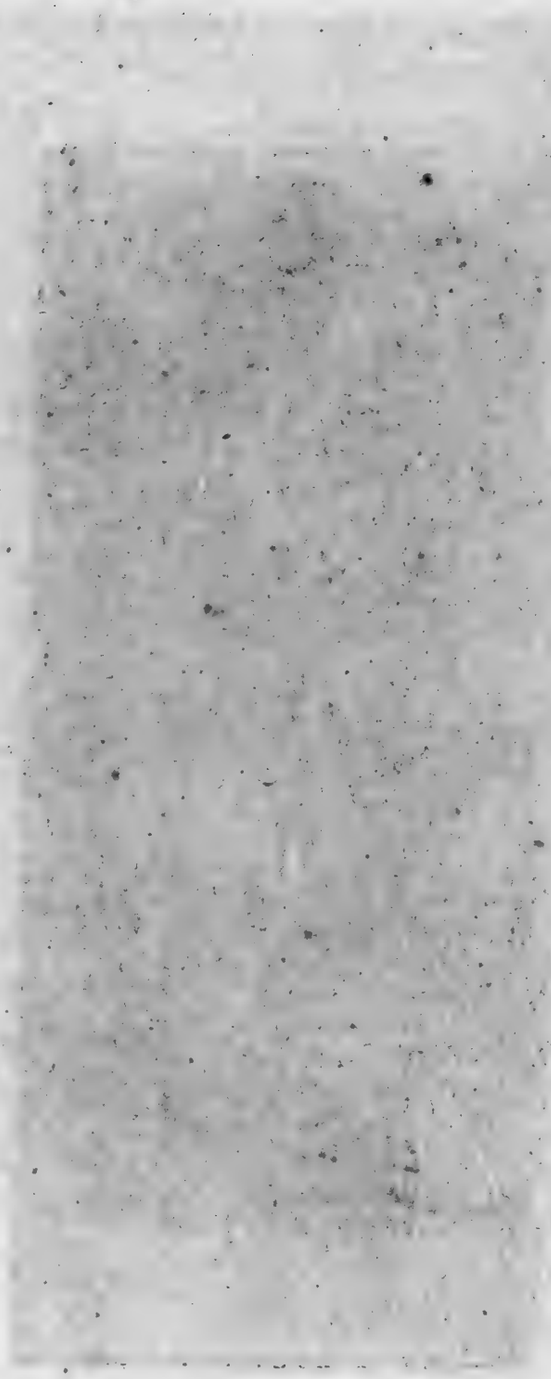


Fig. 9.



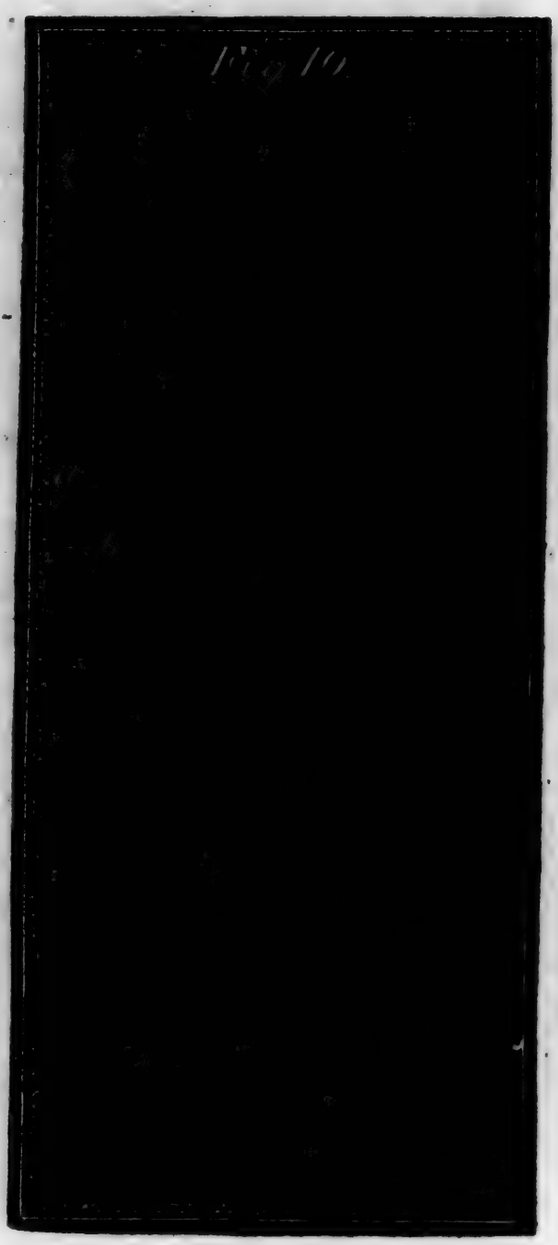


Fig 10

WENS AND TUMOURS
ABOUT THE HOCKS.

Fig. 9. *letter a.*—Represents a Wen, as it appears on the heel of the hock.

Fig 10. *a, b, c.*—Wind-galls, or flatulent tumours, that arise in all the hollow parts of the hock.

A WEN is a fleshy substance, that in different instances has been known to grow out on almost all parts of the horse's body. The causes from which they proceed are difficult to be accounted for. They begin usually in the skin, where the vessels are extremely small, and enlarging gradually, in time grow to a considerable size. They are seldom painful, being of slow growth, and are sometimes of several years standing before they grow to a large size. The substance is generally fleshy, but sometimes spongy. But when involved with fibres, they on dissection appear like so many threads laid across each other. When it has a communication with the membrana adiposa, its substance is chiefly an accumulation of a greasy matter resembling suet. One which I extracted for Mr. Benjamin Reynolds, cooper, (in Front street) from the back of a dog, nearly the size of a hat, was of this kind and substance; and I once operated for one on the eye of a horse, also one from a bullock, nearly the size of a common melon. This substance when cut was a mass of fungous flesh. There is sometimes a great effusion of blood, and it is but sel-

dom it can be stopped by the cautery. When they become pendulous, and hang by a small root, the best way to extirpate them is by a hair, or searing it off with a hot iron, and healed with common digestive ointment, or sprinkled with a little burnt alum, and white vitriol, of equal quantities, mixed.

Young horses are ticklish, and are given to kicking when standing between bales; by these means they strike their hams and produce a swelling such as is represented in the plate upon the top of the os calcis, or hock. This, however, can be remedied by removal, and the part bathed with verjuice. I would never recommend the extirpation of these tumours when on this part.

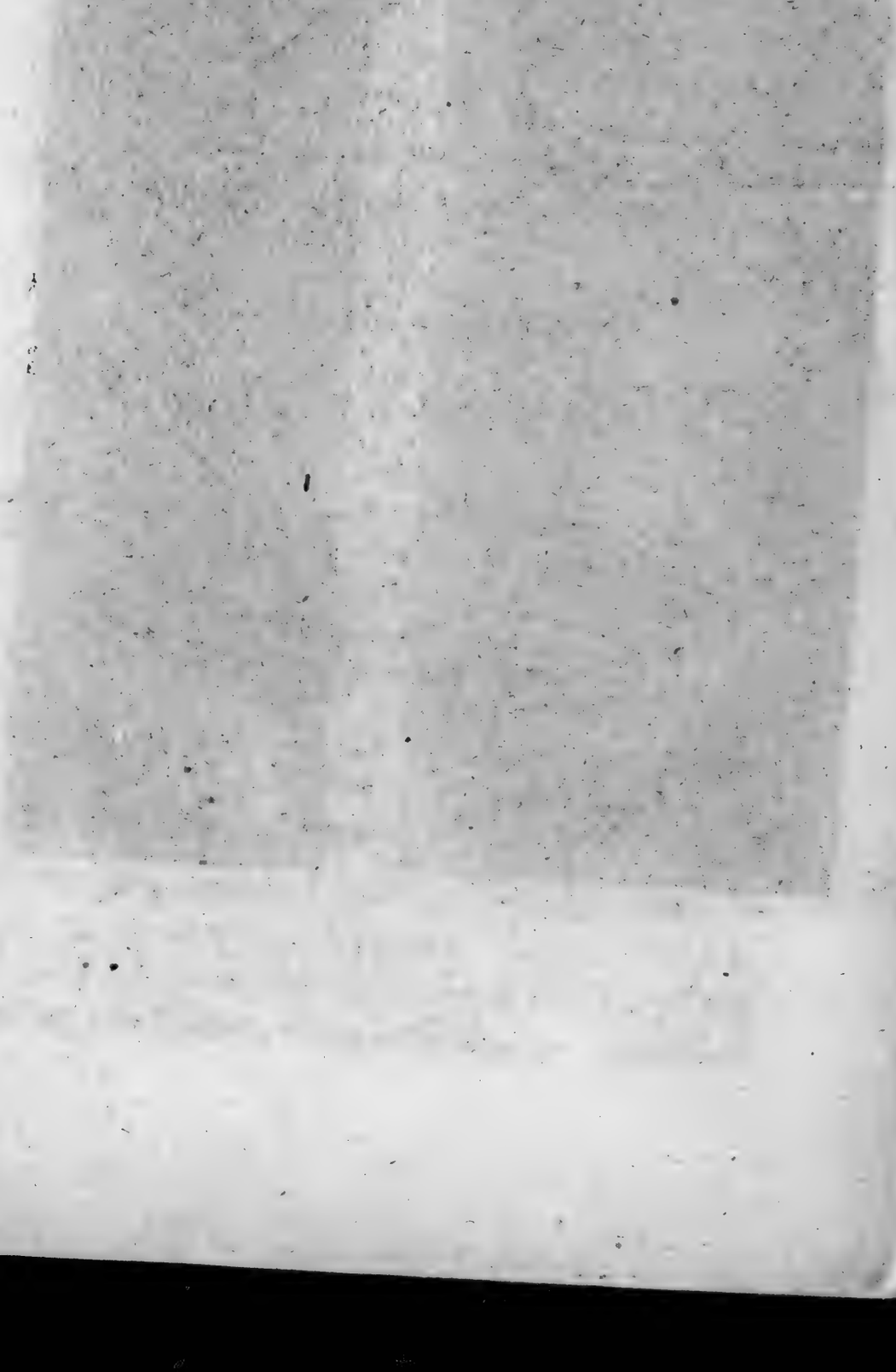
OF RING-BONE AND CURB.

Fig. 3.—Shows the hind leg of a horse in a bent position—*a*, the heel of the hock—*b*, the Curb, or hard swelling, as it appears when grown to its full size below that part.

Fig. 4.—Represents the fore leg of a horse in a straight position—*a*, *a*, *a*, the Ring-bone, or circular hard swelling, round the pastern joint.

Fig. 5.—Shows the false quarter—*a*, the seam on the quarter from the coronet to the bottom of the foot.

A RING-BONE is a bony circle surrounding the whole or part of the coronet. A Ring-bone has an affinity to a Bone Spavin, and in very upright positions, either such as are naturally so, or become so from high contracted heels, the bones



are so perpendicularly opposed to each other, that great jar is sustained during motion, and a disposition to inflammation is excited from these constant shocks.

A Ring-bone that shows itself above the coronet, producing great lameness, generally terminates in anchylosis of the joint, and renders the case hopeless. In other instances, the coronary ligament becomes ossified; in which case the lameness is not so great, though commonly very difficult of cure. But the Ring-bones that prove the least mischievous are those that are found on the sides of the foot, arising from ossification of the lateral cartilages.

In these several cases the complaint is not difficult to detect; but persons unacquainted with the anatomy of parts call them all Ring-bones without any distinction, nor can they say whether from their situation they are curable or not. The knowledge of this circumstance is of consequence to the scientific practitioner, as he not only saves the poor animal from great pain, but does not deceive his employer by the promises of a cure, when from their peculiar situation the thing is impossible.

Ring-bones are sometimes attended with heat and pain; at others with very little; but they always occasion some lameness. Those arising from ossification of the lateral cartilages are commonly confined to aged or hard-worked horses: those produced by upright pasterns, or peculiar formation of the parts, are occasioned by hard work, and generally appear at the middle period of life, while the ossification of the coronary ligament seems a constitutional affection dependent on a disposition to bony matter in these and other parts. In proof of

which I have frequently seen them on colts of three and four years old.

Treatment.

The treatment which I have generally found the most efficacious is the following; for simple blistering will seldom succeed, and even the most judicious treatment often fails. For four or five days rub the part with the mercurial ointment; then blister; in ten days after fire, and re-blister immediately. In firing this part, you must avoid wounding the bony quick, or you may produce a Sand-crack.

CURB.

A Curb is described among the exostoses, and is sometimes an affection of the os calcis; though more frequently an inflammatory affection of the ligament, being situated posteriorly a few inches below the point of the hock. Its existence is detected by a prominence more or less conspicuous, on the otherwise level line of the hock and cannon. It usually comes on suddenly, and generally on young horses, and is not productive of much lameness, unless very considerable, and long neglected.

Cure.

The cure of a Curb is seldom difficult, and if a horse can be spared only a sufficient time for the application and com-

plete healing of a blister, he may be radically cured. They are generally the effect of a strain; and it is but to go through a regular blister, though sometimes the fire may be necessary.

SPLINTS,

SHOWN IN TWO VIEWS OF THE FORE LEG.

Fig. 5.—The hinder or back part of the fore leg, to show a Thorough Splint—*a*, *a*, The Splint situated behind the bone and the back sinew, appearing on both sides thereof.

Fig. 6.—Represents the fore leg sideways, to show the more usual and ordinary kind of splints—*a*, A Splint under the knee near the joint—*b*, A Splint on the middle and fore part of the shank bone, disfiguring the leg.—*c*, A more formidable Splint on the back part of the shank bone, near the insertion of the back sinew.

SPLINT is the farrier's term for a species of exostosis situated about some part of the carpal, metacarpal, or cannon bone, or in other words between the knee and pastern; very generally on the inside, but when attached to the knee itself, they call it osslet. When this bony tumour comes upon the upper part of the shank or cannon, it is universally known by the name of Splent or Splint, and which is a very common evil among young horses, but much less so among old ones. Some horses are more subject to them than others. But few put them out after six or seven years old, unless they meet with blows on those parts. A Splint that comes on the middle

of the cannon or shank bone, is seldom dangerous; but those that arise on the back part of this bone, when they grow large and press on the back sinew, always cause lameness; but unless they are situated near the joint they seldom do.

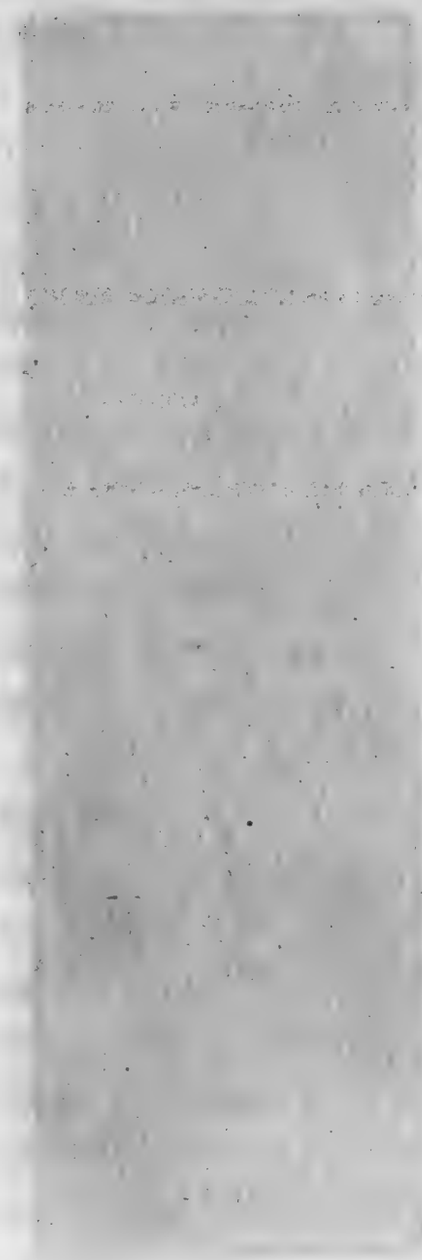
Cure of Splints.

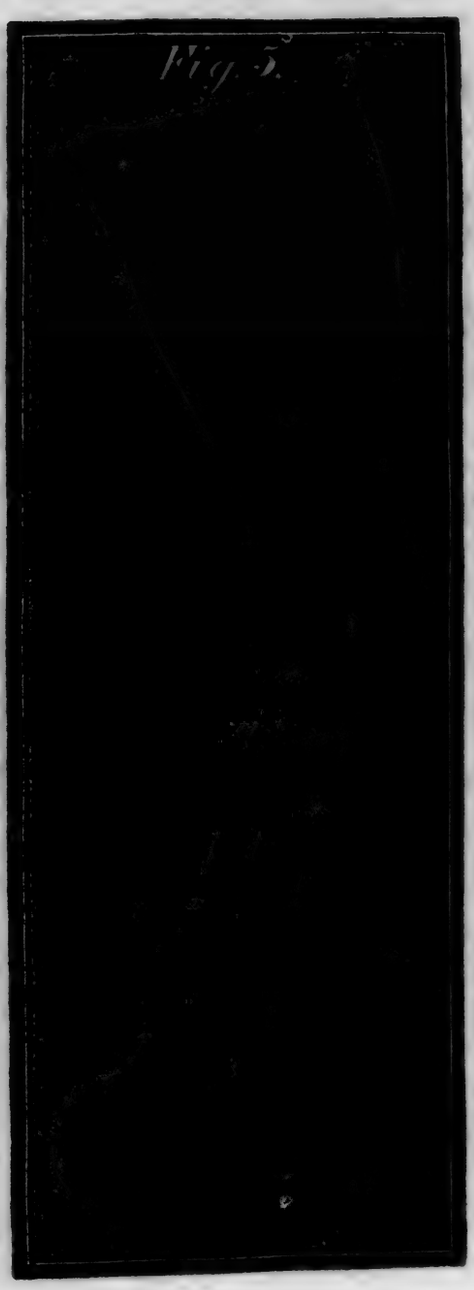
As to the cure of Splints the best way is not to meddle with them, unless they are so large as to disfigure the horse, or are so situated as to endanger his going lame. Splints in their infancy should on their first appearance be well bathed with vinegar or old verjuice, which by strengthening the fibres often puts a stop to their growth; for it is the periosteum or the membrane that covers the bone that is thickened and not the bone itself; and in some constitutions purging and some diuretics will have a tendency to reduce this enlargement.

The most effectual method which I have ever seen practised is one which is in use among the nations of the East, (who understand these things pretty well) and which is followed by a celebrated veterinarian of the present day. Rub into the swelling, night and morning for five or six days, two drachms of mercurial ointment, using a good deal of friction with the hand to assist its entrance. After the mercurial friction, which leads to soften the osseous matter, apply a mercurial blister:

Take Spanish flies . . . . 4 ounces.
Corrosive sublimate . 2 drachms.
Turpentine and Lard, Q. S. to make the ointment.

And when the parts are healed, the blister may again, if ne-

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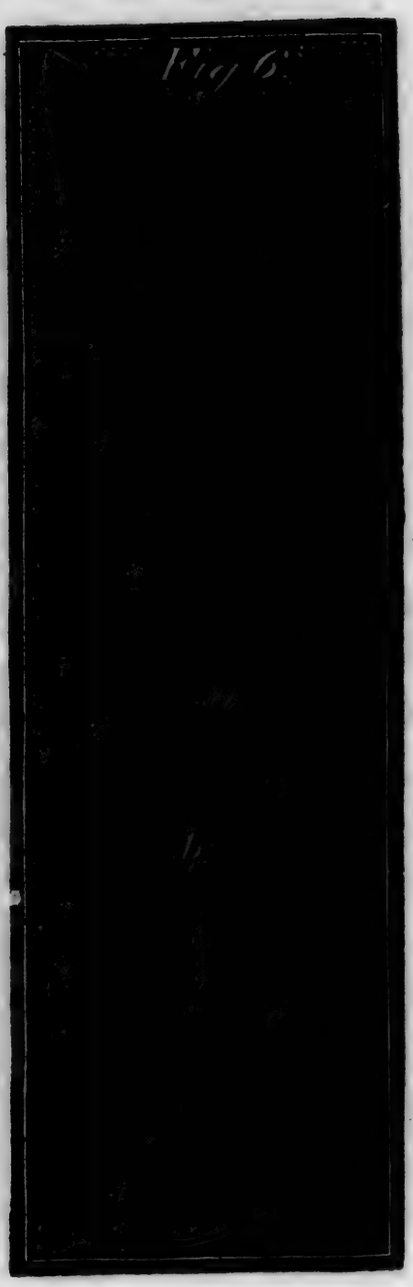


Fig 6.

cessary, be repeated; and in very bad cases it will be found necessary to apply the fire or actual cautery, and immediately apply the blister over it.

During my residence in India, I used to observe the natives reduce a Splint by the following mode of operation; and having made a note of this circumstance, when at the Veterinary College I tried it on several horses with great success; though many of my brother students have often laughed at me when I used to speak of it. If a Splint lies on the bone, that is, on or between the large and small metacarpal or cannon bones, so as to impede the action of the flexor tendon, which runs on the back part of the leg, I recommend by all means to let it alone; but if it only lies near that part, and on the large metacarpal or cannon bone, I would use their method in preference to any other, and a simple trial will prove its good effects. First rub the part with a round hard stick or buck-horn handle of a knife, until you feel it somewhat softer than before, then take a large darning needle, and fix it in a small hand-vice so as to make it manageable; heat it over a candle, and when moderately warm, make according to the size of the Splint, several (say three, four, or half a dozen) holes, being sure that some of them reach the bottom; then apply a gentle blister, and repeat it, if necessary.

I have never tried it on a Bone Spavin, but I should think, from the similarity of the two, that in the very early stage of the complaint, before ossification has really taken place, that it would have the same effect. It is at all events worthy of trial.

QUITTOR,

OR FALSE QUARTER.

Fig. 11.—Represents the Quittor—*a*, the orifice from whence the matter generally flows—*b*, the matter running down the quarter—*c*, *c*, the swelling round the coronet—*d*, the sinking and depression of the hoof, caused by the erosion of the ulcer.

QUITTOR, or QUITTOR-BONE, is by Mr. Coleman defined as an ulcer between hair and hoof. It arises from treads and bruises on the inside of the horse's hoof; sometimes from gravel, which, by working its way upwards, lodges above the coronet; in this country called Gravelling.

Mr. Youatt, a celebrated practitioner of the day, taught me while at College a great deal respecting this dreadful and painful complaint.

It is not an uncommon disease, being a very destructive one which has always occupied a considerable place in the farrier's list. The older ones in all countries, impressed with the obstinacy of its character, had always employed violent means for its cure. Monsieur La Fosse, in the early day of his practice, many years ago, thought it a complaint of the cartilages. But this idea was found to be erroneous; for cartilages are vascular, and as such they must be capable of living action, though it is slow; and hence, where disease exists, they will exfoliate like other parts.

The practice of La Fosse was received into England with avidity, and progressed until the first professor of the Veterinary College, Mr. St. Bell, came to England, when another treatment was introduced.

It is now well known that parts of little vascularity, when diseased, require stimulating, and sometimes very actively; for it is necessary first to destroy the diseased surfaces, and then to excite the healthy action, to enable them to throw off the destroyed portions. Formerly, as we have noticed, either the actual cautery or caustic were employed for this purpose, though the practitioners were not aware of the rationale of their operations. Of late date the knife has been used, and by bringing the part into a simple wound, promoting a natural cure. Its very premises, Mr. Youatt says, are wrong; the simple exciting of organs so little vascular as those in confirmed Quittor, will not bring the parts into a simple wound, from the difficulty of removing the whole of the sinuses with the knife; for it is well known that if any of these are left unexercised, the disease is not subdued. It is further ineligible, from the great danger of wounding the capsular ligament in making the necessary sections, particularly when the sinuses run inwards.

I have before stated that a wound in the cavity of the foot only becomes a Quittor when it has taken on a peculiar diseased ulcerative process, principally dependent on the parts it affects.

Quittor is one of the most difficult diseases of the foot we have to contend with. It takes its origin from several causes; such as pricks, an overreach; but with draught horses it most

generally is occasioned by a bruise or a wound inflicted on the horse by a tread on the coronet; and which circumstance happens more frequently in this country than any other, in sleighing time, when horses are always shod with calking—an erroneous idea, that horses cannot go in winter time without them. *There is, however, a method of shoeing horses to prevent all these evils; but this is a secret in the shoeing art which I have never yet unfolded:* for I do positively assert that a horse may be shod during the winter, and be made to go as safe for twenty years without ever causing a Quittor, as if he had a calking on each shoe. But when you tell a blacksmith in Philadelphia how this is to be done, or attempt to introduce any thing new, which they have never seen before, they immediately cry out, "O Doctor, I knew this before; I shod horses in this way, 20 years ago, in Ireland and Scotland!"—This, however, is foreign to our subject.

The high calkings of their shoes are peculiarly mischievous, and often create serious evils. Any part of the upper margin of the foot is open to this accident, but one of the quarters is most usually affected; and as the injury is mostly considerable, so the lateral cartilages are at once wounded, and if not, the bruise being such as to produce death in a portion of the surrounding integuments and other vascular parts, the coronary expansion, &c. extensive ulceration soon follows, and the dead portion being thrown off by the inflammation, farmers and others ignorant of those things say a core has come out. At this period of the complaint it is however evident, that the disease should be treated in no respect as a confirmed Quittor, but simply wound or abscess; and it is to a different conside-

ration of the subject, that the future evils result, for farriers are too apt on those occasions, under the idea of assisting the core out, to introduce strong stimulants, the inflammation excited by which actually occasions the evil they intend to prevent, for the less vascular parts then take on the disease, and sinuses begin to form. If, therefore, matter begins to form, and penetrates in a direct line downwards, make an opening in the hoof below, and place the whole foot in a cooling poultice; avoid motion of every kind, and use other means of combating the inflammation, as bleeding, low diet, and internal remedies.

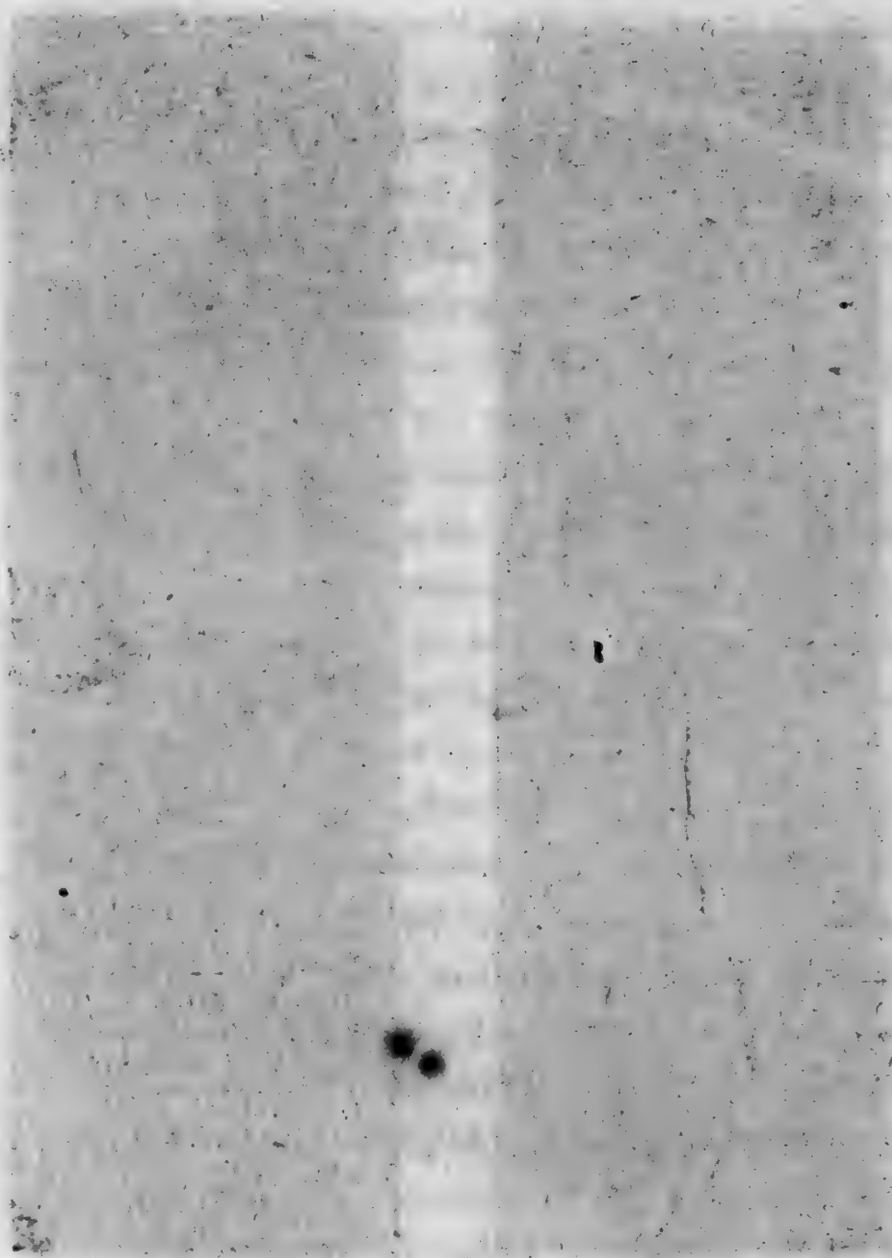
Treatment of Confirmed Quittor.

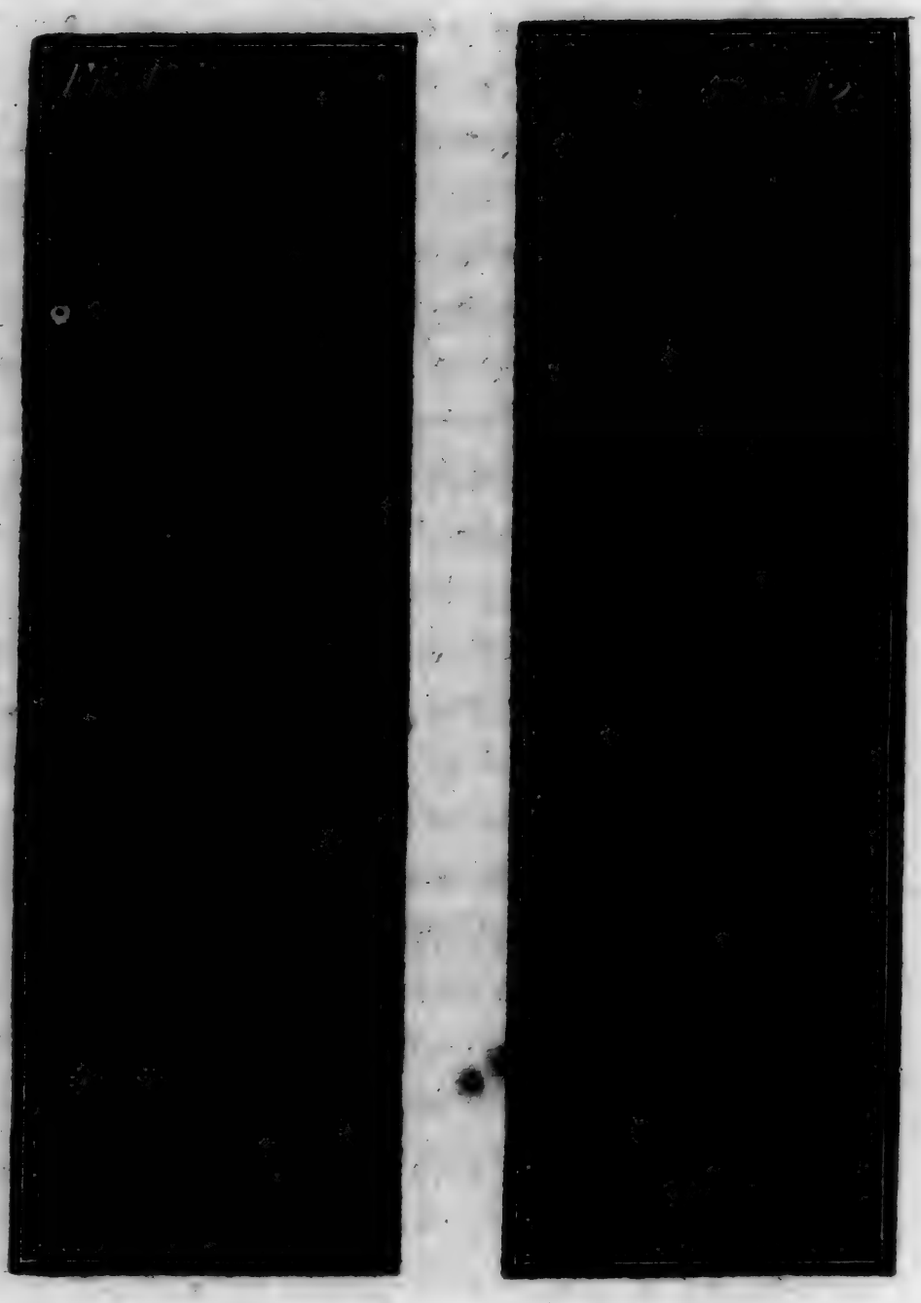
When this complaint has fully established its character, then it can no longer be considered as a bruise, wound, or abscess, but must be regarded as an ulcer, which must be cured by means more consistent with the modern forms of surgery. But after all, no method has been found so successful as the long established practice of coreing it out, which is nothing more than the caustic process to destroy the ulcerated edges, and by raising a strong inflammation produce a new and healthy action.

The first necessary step to the cure, is a careful examination, with a *leaden probe,* of the extent of the ulcer or pipes; and should any of these proceed inwards, and the probe meet with a hard body, it will be more than probable the bone is bent, and the case will turn out unfavourable. But when, on

the contrary, the sinus is outward and downward, or backward towards the heel, the cure will not be so difficult.

From what has now been said on this difficult subject, it will be evident that the substances that act as a caustic, may be introduced to remove the diseased surface, or according to the farrier's term, to core out the Quittor. Crystallized verdigris, corrosive sublimate, butter of antimony, arsenic, solutions of potash, and lunar caustic, are all in use for this purpose. However, one circumstance is self-evident, which is, that humanity as well as prudence dictates that we should use the mildest means first. It too often fails; but in every instance where the sinus can be reached by a syringe, the cure should be attempted by an injection for a few days with a tincture of cantharides in turpentine, or a mild solution of caustic alkali or lunar caustic; but if these should fail, it will be prudent to proceed to the more active stimulants. When the upper openings are very small and the sinus deep, make a paste with equal parts of rosin and sublimate, softened with tar; impregnate small pieces of wool fully with this paste, which place round the end of the probe, and introduce them, but not jam them in with force. Sublimate and verdigris rolled up in thin paper is frequently used at the college so as to make a bougie, which being greased with tar to make it slippery, should be introduced to the bottom of the sinus. The hoof also should be thinned and put into a poultice, by which the diseased surface may be dressed. In two or three days after the introduction of the caustic, great heat and tumefaction of the foot will follow, and at last it will burst open, expelling





the slough, together with the application which occasioned it, after which process the wound will heal.

FALSE QUARTER,
OR SAND-CRACK.

This consists of a separation of the horny fibres of the hoof, in a perpendicular direction; and if they extend to the coronet they are extremely difficult to cure. The term Sand-crack is supposed to arise from sand and dust getting into the fissure or opening of the hoof, and which is erroneously supposed to be the cause.

The old nomenclature of Farriery has many absurd names, but this has a more significant origin, and is called Sand-crack because it is ever supposed to be peculiar to hot sandy districts. This however is erroneous, for no horses are less liable to Sand-cracks than the Arabs, before they get into our possession, and become subjected to our stable management of standing on litter; and if people would only get into the habit of using sand more frequently than straw, Sand-crack would soon disappear—but here again the servants would interfere and crush it as an absurdity. These fissures are more common to the fore than the hind feet, but in cart horses they most generally come in front of the hoof, which I say is no Sand-crack, but a fissure in front. Sand-cracks, as they are called, are caused by contraction, which originates from a brit-

tleness of the hoof for want of the proper application of water to the feet, and against which the new veterinary bath will prove a sure preventive; for since the introduction of water by the bath into the cavalry regiments in Europe, no such thing as Sand-crack is now known or even heard of. Sand-crack, or what I more properly call a fissure of the quarter arising from contraction, originates from an inflection of the quarter of the hoof round the points of the coffin bone, and which is sufficiently explained in my treatise lately published, on Contraction.

The fissure is not always of one determinate depth, being sometimes so superficial as not to penetrate the whole thickness of the horn, and occasions no inconvenience at first. At others it extends through the horn, and comes to the sensible laminæ underneath. Neglect and a continuance of work, however, soon produces mischief, and aggravates by the introduction of dirt, sand, or gravel; it then becomes a painful affection and produces great lameness, and from the injury done to the sensible laminated expansion, there is often sprouting fungus between the divided edges which greatly aggravates the complaint. Accidents of all kinds, injure the vascular origin of the hoof. They also sometimes originate from stubs, treads, &c.

Treatment of Sand-cracks.

The grand object is to interrupt the communication between the crack and sound hock, and a radical removal of the evil will be best done by scraping the divided edges with a

drawing knife, thinning the quarter with the rasp, and the application of the bath provided the opening does not come in contact with the laminæ; if it should, the bath must not be used until the laminæ is quite protected by a renewal of the horn.

When a Sand-crack is the effect of an injury done to the coronet, the rising edges of the horn must be reduced, and the surrounding portion also thinned. The college treatment is then to fire transversely of sufficient depth so as not to touch the laminæ, which will stop the extension of the line or fissure. If, however, dirt or sand has penetrated into the opening, it must be carefully removed, and the wound dressed with tincture of myrrh and aloes: then close or bind it up until sufficiently healed to leave the bandage off. If suppuration has made its way and penetrated the horn, introduce a small quantity of the lunar caustic in solution, as ten grains to a drachm of water; bandage the hoof up for two or three days, then again examine the fissure; if then the oozing is stopped, and no inflammation appears, proceed to draw a transverse line of moderate depth across with a firing iron above or below. I have, however, frequently performed this with the rasp or drawing knife; but the iron is best, the seared line being more strong than the rasped, or the one cut with a knife. The horse must now be shod with the *patent bar shoe*, as represented in the plate of my other work on contraction; so that the hoof underneath may not touch the shoe. The quarter being now rasped, and the frog made to press on the most prominent part of the middle of the heel of the shoe, will cause the quarter to expand, and the fissure will thereby close.

If the fissure should now be sufficiently closed to warrant your turning him out, do so; but if he is kept in the stable, he must have walking exercise daily *in hand*. It now only remains to be noticed here, that as most of these cases take their origin from an altered condition of the hoof, for want of the proper and timely application of the bath, when young and before any contraction has made its appearance, so all preventive means detailed under contraction apply here till after the recovery is completed.

OF CANKER.

CANKER is a diseased, debilitated, and vitiated action of the blood vessels, that in a state of health are meant for the secretions of the sensible sole of the foot.

From the very great vascularity of the internal part of this organ, and likewise from the nature of its office, many of them being secretory organs, the inflammation that occurs in them prove, in progress and effect, altogether different from those that take place in other parts. The great vascularity heightens the violence of the inflammatory actions, and from their secretory structure it happens that when they become inflamed a great increase of part arises, which is never of a healthy nature, but commonly compounded. Canker is a very obstinate and destructive disease, as much if not more so than any of the diseases that the veterinarian has in the whole course of his

practice to contend with; and Mr. Coleman as well as Mr. A. Cooper say that they know of no disease of the horse that comes more in affinity with the human subject than that called Cancer in the breasts of women: and the Greek and Roman writers of ancient days knew well what this dreadful disease was, and they called it by various names, particularly that of *lupus*, because it eats away the flesh like a wolf. This is completely realised in the disease called Canker in the foot of a horse.

This disease may be brought on in various ways. A very common origin is from a neglected Thrush, in which the suppuration, extending beyond the sensible frog, inflames the vascular sole, and extensive ulceration succeeds. Virulent and neglected Grease will sometimes occasion it. In both these ways it is frequently engendered among heavy cart horses, particularly where many stand together in crowded and confined situations, as those of coal porters, brewers, &c. Here they become greased and thrushy, from wet and neglect, and Canker soon follows. It also often arises from pricks; and where such an injury extends to the flexor tendon and Canker is the consequence, it is commonly of the worst kind; though more frequently the poor animal, under such circumstances, is cut off by the Lock-Jaw, or by the Hectic, arising from the extensive sloughing. Treads, bruises or bad corns may now and then occasion it. It is but seldom met with in the fore feet, and but seldom or ever met with in this country, though it is perhaps a more common disease than any we have in England and on the continent; at the same time Canker and Thrushes are very frequent in this country, without ever ex-

tending to the sole: but from what cause this is occasioned I am unable to account for.

Treatment and Cure of Canker.

Mr. St. Bell, the first professor of the Veterinary College, pointedly insisted on the total removal of the insensible sole and frog; but as the pain necessarily attendant on such a cruel and barbarous operation, from the very firm adhesion of the parts, and as experience has proved that a more mild treatment will suffice, it is of course not required to go to such extreme severities. And when Canker is only in its infancy, every diseased portion of it may easily be removed by a drawing knife or scalpel. The surface of the diseased sole and frog must then be accurately examined, and every part of the fungus production removed, which sometimes will produce considerable hæmorrhage, and which may be checked by slightly touching it with butter of antimony, or the actual cautery; then carefully examine what extent of horny sole is separated from the sensible sole, or as a farrier would say, how much it is underrun; exactly to this extent must the sole of the hoof be removed with the drawing knife; for it must never be lost sight of, *that the horny sole once separated never reunites*, but becomes a foreign body, and as such, occasions the same effects that occur from the presence of foreign bodies in all other parts, namely, irritation, and an inflammatory process to attempt the removal of foreign substances. Every portion, therefore, of separated horn must be carefully removed: not only at the first, but at every *future* dressing, for even the

smallest particle left, although only as big as a pin's head, will again extend itself all over the sole.

Having thus fulfilled the first indication by removing the diseased fungus, and having lessened the irritation which occasioned it, by removing the detached horn, the next process is to promote a more healthy action in the diseased surface.—Two plans tend to this end; the first is, by stimulants applied to the surface of the vessels; the second is by pressure, which strengthens them greatly and generally. But as long as there is a profuse secretion of whitish matter, and as long as the fungus sprouts beyond the surrounding parts, so long will the cankerous action be going on, and during this time no secretion of sound horn will ever take place, an unhealthy formation of thin half formed horn may be observed over many portions of the surface; but this will always prove an *unhealthy secretion*, and must not be allowed to remain, but on the contrary be carefully removed at every dressing, until by the application of caustic stimulants and the benefit of pressure, a granulating surface is formed which produces only good pus or matter, and finally ends in the formation of sound horn.

After the exposure of the whole cankered surface and the treatment before directed, let it be sprinkled with either of the following powders:

No. I.

Red precipitate	half an ounce		
Verdigris	Do.	do.	
Calomel	Do.	do.	*Mix.*

No. II.

Blue vitriol	one ounce		
Burnt alum	Do.	do.	
White lead	Do.	do.	*Mix.*

The affected parts being covered with either of these stimulants judged proper, let it be dressed as dry as possible by first laying lint on the immediate surface, and then pledgets of tow thickly over the bottom of the foot, which should be done very judiciously, so as to keep up even pressure on the whole; and in order to do this the more effectually, Mr. Coleman and Mr. Youatt would direct strips of iron or steel slid under the shoe crosswise, which will not only retain the dressing, but promote pressure. This being done, wrap up the whole foot in a sacking of thick cloth or a boot. It is a very great fault in dressing cankered feet but too seldom: no case ought to be dressed less than every day; and very bad cases twice a day. From a wish to avoid trouble this is neglected, and the cure rendered incomplete. Keeping, therefore, the before above mentioned indication, the practitioner at each future dressing cannot be at a loss how to proceed, and when the fungus is completely reduced and the discharge lessened in quantity, and it has become healthy in appearance and quality, with a sprouting healthy horn, then nothing more is necessary than to wash the parts, *to dress dry*, and give a proper degree of pressure till the sore is completely healed over.

A fine chesnut horse, formerly the property of general Boyd, had this disease so very bad during my residence on Long Island, that it took nine months before the animal was completely cured. This was an extraordinary case, and excited the attention and surprise of many hundred gentlemen in New York.

OF THE

SURGICAL OPERATIONS,

AND

VARIOUS RESTRAINTS IT IS SOMETIMES NECESSARY TO PLACE THE HORSE UNDER FOR THEIR DUE PERFORMANCE;

SUCH AS,

Castration, Nicking, Pricking, Docking, Blistering, Firing, &c. &c.

When it is necessary to perform any painful or unpleasant operation on so powerful an animal as the horse, it becomes of consequence to secure both him and ourselves from the violent effects of his resistance, by subjecting him to restraint equal to the occasion. Horses are very unequal in temper, and bear pain very indifferently, though some I have again seen that would stand and let you run a red-hot iron through them even without flinching. It is, however, always prudent to prepare for the worst, and no important operation should ever be attempted without this precaution of casting; but which some idle smiths and farriers avoid, and call it a pack of d——d nonsense. Life is lost in a moment from the kick of a horse. A limb is fractured or broken in the twinkling of an eye. But how many painful days and nights, and even months, must not a person suffer before he is again able to walk. The smiths almost invariably do every thing by the side line and the *broomstick*.

To give directions on such occasions as these to the veterinarian is quite unnecessary; but as this work is intended as a guide to the inexperienced or junior practitioner, and those willing to learn, I shall not, I hope, prove *uninteresting or uninstructive* when I detail those minor matters. Humanity should be the fundamental principle by which we are to act on these occasions, and to subject the poor animal to no more pain and torture than is absolutely necessary. The resistance of the horse is terrible, while that of the huge elephant is silent murmuring, with groans and tears that would almost pierce the heart of a rock. This I have many times been an eyewitness to during my long residence in India.

The lesser restraints are various: among them may be noticed the *Twitch* and *Barnacles*, as so called. The Twitch is a very necessary and useful instrument in a stable, though often unnecessarily used, which always has the ill effect of rendering many horses vicious to resist its too frequent application. There is no part more tender and more susceptible of feeling than the nose of most animals. By the nose you may drive or guide the most unruly horse, almost with a twine. By the nose man and dog can pin and subdue the strength of the strongest and most ungovernable bull. In many instances blindfolding will do more than the Twitch. By a firm, but soothing manner and some coaxing, with a little *sugar* or *salt*, but *no flogging*, you may not only do and perform wonders, *but subdue the most violent horse in the world.* Horses can use their fore legs as well as their hind ones, and persons should be on their guard in blindfolding a horse, for he will not only strike out, but even take aim in doing so. Barnacles are a

sort of clams used by the smiths as they use a Twitch, and are admissible only when assistance cannot be obtained. When one of the fore feet or legs wants a minute examination, it is always prudent to have the opposite one held up; if the foot is then elevated to kick, there is always sufficient warning for the operator to avoid the stroke, and without the use of this precaution the practitioner runs some risk, which he may always avoid.

THE TREVIS.

This machine is the very utmost limit of restraint, and is very seldom used but by smiths to shoe very powerful and unruly horses. Whenever it is necessary to have recourse to this machine, great care should be taken to bed and bolster all the parts of it that are likely to come in contact with the horse's body. In France this machine is used to much greater advantage among their smiths; and during my residence in that country I have seen horses very dexterously shod. Their smiths shoe very different from ours; and when they come to this country we are both astonished and surprised to see how one man will handle a horse by himself, while here they say it takes three and four men to shoe one. The Germans shoe on a block; and the French have a round cross bar in their Trevis or across their stalls in the shops, and the hind foot is taken up and fastened there by the fetlock joint, by straps and cords, and then they cut and slash away with their buttems. I have, however, seen many horses ruined and destroyed by the Trevis; at least their aversion to restraint has been such

that they have died under their own resistance: it should, therefore, never be used but by patient dexterous men. As for my own Trevis, having always taken the greatest precautions in using the machine in the way I have made it, I never had an instance where it was even offensive, or that I could not put it on a horse the next day if necessary. The sort of Trevis I mean, is like unto that in Baldwin and Thomas' stables in Fourth street; and if properly made on that principle, with a proper screw, canvas girt, and broad leather (not rope) back strap, it is in the hands of a prudent man one of the best machines I know of for Nicking, Docking, and Pricking. If, however, I must give my real and honest sentiments respecting these things (which are only invented by the ignorant to gratify the pride of man) they are all entirely useless, excepting docking, and it is only a cruel and barbarous custom. Docking, however, is so simple, and, if properly done, is attended with so little pain or danger, that I do not object to it; it might always be done, and at the same time combine both nicking and pricking, without resorting to these butcher-like operations. And I will maintain that if docking is properly executed on my principles, that a horse with ever so bad a tail may be made to carry well, without resorting to either of the two former operations, viz. nicking or pricking. This operation I have performed in two ways during my stay in India, and with always as good an effect as by having recourse to that barbarous custom.

THE SIDE LINE.

The side line, such as used at the Veterinary College of London, is a good thing, and may very conveniently be used in some of the minor operations, particularly on such horses as are liable to strike behind. It consists simply in placing a plain hobble strap on one hind leg, and then passing the end of the rope attached to the withers, bringing it back again under the neck, and over the other portion over the neck, so as to leave a slipping collar over the neck as it were, by which the hinder leg should be drawn forward as far as it can without elevating it from the ground. By this displacement of one leg, the animal is perfectly and effectually secured from kicking; it is, therefore, a very useful means of restraint in slight cases. I would not, however, recommend the risk of any important operation with a side line only.

ON CASTRATION.

Castration is the operation by which an animal is deprived of his testicles, so as to incapacitate him for propagating his species. When performed on the male, it is called gelding; on the female, splaying; and the latter is performed in India on mares as common as on sows in Europe. A good deal of difference of opinion exists as to the proper time of castrating colts. Bulls are often castrated at eighteen months or two years old; but it is observable that they grow a good deal

larger, and fatten sooner, when it is done at ten or twelve days after birth: and it has by experiment lately in England been proved, that they not only become much fatter, but less ferocious and more active. In colts it is sometimes performed at three months; at others it is deferred till twelve months: but when performed so early there is a difficulty attending it in the horse, which wants explanation. Mr. Coleman observes that the testicles of the fetus in the human subject, in horses, asses, and most other quadrupeds, is situated below the kidnies in the loins, and they remain in this situation in birds during life, and sometimes in man and horses. But as the testicles do not come down into the scrotum, but remain in the abdomen or belly, there is some difficulty in castrating colts at twelve months old. The spermatic vessels which must be divided are of course very short, but they begin to grow longer exactly as they descend, and it is not until some time after their descent that they begin to secrete: in the human subject not until the thirteenth or fourteenth year; but they perform this office at ten, eleven, and twelve months in the horse, and they are the only glands that possess this peculiarity, all the rest beginning to secrete their proper fluids soon after birth. as the liver, kidnies, &c. &c. It is a curiosity how the testicles of the horse descend into the scrotum, not by gravity, as was supposed by Dr. Hunter, it being possessed of a muscular power which enables it to draw the testicles down when they come to the orifice of the abdominal ring; they of course meet with the peritoneum, and carry part of it with them much the same as the sack in hernia.

College Mode of Castration.

We first begin by dividing the scrotum or bag in which the testicles hang, and then the tunica vaginalis, or second coat that covers it; after this the test slips out of the bag or tunic. We then divide every thing with the knife, but the vein and artery. We divide the vas deferens higher up than we do the blood vessels, and with it remove the epidermis or straight cords. We then get a pair of clams, or tournaquet as you please to call it, and rolling some tow round it, embrace between them the blood vessels *near the body of the testicles*, so that if bleeding or hæmorrhage should take place afterwards, we may be able to get at them. Then take the actual cautery or firing iron, (not too hot; if white, reduce it to a red heat by rubbing it on a smooth piece of plank or old shoe) and scrape the vessels with it, so that we may leave the extremities *ragged*. The common farriers do not take this most necessary precaution, which is the only particular in which we differ from them in performing the operation.

After dividing the vessels in this way, we then sear the ends, and by sprinkling a little rosin on the part, it will keep them plugged up, and the more readily stop them from bleeding. The pressure made by the clams should be very considerable to stop the circulation, but at the same time be careful not to bruise them *by too severe pressure*, or you bring on gangrene and mortification; this, therefore, requires judgment. We should not remove the clams until we are certain that we have plugged up all the vessels, and this may be tried

by gradually opening the clams, till we see whether the blood comes through their extremities. If this should be the case, we again employ the necessary pressure, and make use of the hot iron and rosin till it does stop. It is a very common and received opinion of smiths and farriers, who, unacquainted with the structure, think that by removing more or less of the epididymus,* gives more or less courage to the animal; but this is a very mistaken notion, because it is not the duct, but the gland that gives courage.

After the operation is performed, we should strictly adhere to the antiphlogistic plan for two or three days. You should tie his head up, give no food for twenty-four hours, and bleed some hours after the operation to the quantity of three or four quarts, provided no hæmorrhage has taken place. If the swelling gets high, give walking exercise to promote absorption. You may also give purgatives and diuretics after the third day, and when suppuration comes on, we must pursue an opposite plan, and give mashes made of good meal or shorts or other nutritive food; and if the inflammation should continue, you must insert rowels. I have dressed the parts after the operation with spirits or tinctures; but during my latter

* The serpentine, convoluted, or curled artery, is the spermatic; the straight one is the cord or epidermus. It should also be recollected, that no organ in the animal body demonstrates so powerfully its sympathy with other remote parts; and for this reason I gave the above caution respecting mortification.

A case of this kind occurred during my practice on Long Island, and it was with some difficulty I succeeded in recovering the horse. For want of this very precaution many colts are killed, and no one knows the reason why.

practice, I have applied only dry lint within the edges of the divided scrotum. In colts no dressing is required; but in the old horse, who gets stiff, it may sometimes be necessary. In this operation, the only precautions that are necessary, is to give the due degree of force to the clams, and to be careful in searing: it is better to sear too little than too much; if too much cauterized, inflammation is sometimes apt to make its way up the cord, which must be guarded against. Under all circumstances, if the horse can be turned out to graze during the day, nothing will tend more to facilitate the cure.

DOCKING.

This operation consists in the removal of a portion of the tail, now conveniently practised by what is called a docking machine, which takes off at one stroke the part determined on, it having been previously freed from hair. In colts the searing should be very slight, and in the adult horse it never should be harsh, for even if altogether omitted, the hæmorrhage would never be great or serious. In very full and fat horses, I have frequently applied (as we do at the College) a little powdered alum. The most serious consequence in docking is, that, slight as the operation appears, mortification will in some cases take place, and lock-jaw in others. One thing, however, should be particularly attended to, which is, not to use the horses before they are perfectly well. The neglect of this precaution is often attended with serious consequences,

and too frequently brings on lock-jaw.* In such a case, I would always recommend a second removal of another portion of the tail, and to sear it also; but in mortification terebinthinated dressings only must be applied.

OF NICKING.

Respecting Nicking, there are various methods of performing this most cruel, barbarous and *butcher-like operation*; and I most sincerely hope that every man in possession of his rational faculties, and possessed also of common humanity, will never consent to have this operation performed. Pricking, a less painful operation, is now so much in use by every stableman, that nothing further on the subject, I trust, need be said.

ON CROPPING.

Thank God! custom has also nearly abolished this useless, shameful practice. Circumstances may however occur, though very seldom, to render it necessary. After all, if we reason rightly, though we do possess a horse, with flapped

* A case of this kind lately occurred at Messrs. Thomas & Baldwin's. It was perhaps an oversight, for I know of no two men who use more caution, or that pay more strict attention to the animals under their care than they do. There is, however, a mode of performing this operation to answer all the purposes of nicking and docking combined.

ears, if he perform his journies and labours well, it is only foolish pride that can induce us to do it. One thing is evident, it makes horses very shy about the head; to lessen which, if it should be done, a bridle and halter also should be used without a fore part or fronting, till the ears are well; the bridle should also be made to unbuckle at the side of the bit, so that the head-stall may be dropped on, without the hand being raised to pass it over the ears. This necessary precaution may materially operate in lessening the shyness, which otherwise long remains, and which is never wholly lost if force and cruelty are afterwards used.

ON BLEEDING,

OR VENESECTION.

Bleeding is a well known operation, by which a due quantity of blood is taken from an animal with a view to cure some existing disease, or it is performed in disease as a mode of cure. When blood is taken from an artery it is usual to divide it, as by this means the artery contracts and hæmorrhage is spontaneously stopped. When bleeding is performed from a vein, a longitudinal opening is made by means of a fleam struck with a stick, or a fleam pushed forward by means of a spring, which is in use for a large rolling vein. Blood is also sometimes drawn by means of cupping, and by the application of leeches to any part. Blood is also sometimes taken from the palate, from the jugular, the plate vein, and the superficial veins of the thigh. Local bleeding is also sometimes perform-

ed in the metacarpal or canon vein, running down on the posterior or back part of the pastern, for all inflammations of the feet, but more particularly in founder. Bleeding in this part should always have the preference, as a quart of blood taken from it in all affections of the feet, will do more good than three times that quantity from the general system. This is a nice operation, and should be done with some caution; for as the artery, which in this place is very large, lays immediately in contact with the vein anteriorly, there is great danger of wounding it, unless performed with judgment.

So much am I an advocate for bleeding in this part for affections of the feet, that I think it well worth while for a person to study the structure of this part well, in order to perform this operation nicely. In running the finger down anteriorly along the pastern to the heels or cartilages of the foot, it may be found and felt, and by keeping the finger of the left hand on the vein to raise it, and placing the spring lancet on the vein below, the operation is easily performed. Sometimes it bleeds but slowly, at others very profusely, but never so as to create danger, provided your fleam or lancet is not too large. The common sized human spring lancet is the best, though it may be performed with a small sized fleam, provided you do not strike too heavy a stroke. It may always be stopped by keeping your finger a few moments on the orifice, or by binding a piece of tow or a hay-band round it.

In bleeding from the jugular, some precautions are necessary; but a ligature is entirely useless, as the vein may always be found by a little exercise, and by pressing against it with the middle finger of your left hand, and keeping it there a

short time, the vein will become sufficiently prominent and visible to direct you where to strike. The accompanying plate will, however, be your best guide.

Never let the blood fall on a dung-hill, as the quantity taken by this means cannot be accurately ascertained, and the amount drawn must be determined by the nature of the disease, size, age and strength of the animal. Every stable-boy will tell you he can bleed; but can he tell you the state of the blood when drawn? or can he tell you why the difference of blood while in the body and when out of it; and how this change is produced? how long it should be in coagulating, and the nature of the disease from its cause? Can he tell or explain to you the difference of arterial and veinous blood? and whether, when performing the operation, he has opened by mistake a vein or an artery?—and if so, how to stop the one, and how to prevent the animal from dying by hæmorrhage? These, and many other things respecting horses, show the absurdity of people's talking about matters they have only got by rote from Tom, Dick and Harry. Many people, and very many of them, who profess to know a great deal of their diseases, their causes, their symptoms, &c. without rhyme or reason, bleed in the mouth, or in the tail—cut out the lampas, the hooks, and practise many such absurdities, and cannot give a rational reason why or wherefore.

In stopping the orifice when you bleed in the jugular, never pull the skin (as many do) from the vein underneath, as it is apt to produce a flow of blood in the cellular membrane, by which very serious cases often happen. Not less than twenty horses have I seen destroyed during my residence at the col-

lege, by this operation being done in a bungling manner by the smith or common farrier.

In drawing blood from the veins of the extremities, as before mentioned, for local inflammation of the feet, the bleeding stick should be avoided and the spring lancet only should be used. The most proper place for general bleeding, is two inches below the division of the jugular vein, where it branches off, as described in the plate.

Practitioners are apt to be too indifferent as to the state of their instruments. Lancets and fleams should always be sharp, and very highly polished.

The temporal artery may be opened in cases of staggers. This vessel can be readily detected at three or four inches below the root of the ear, in a line towards the nostrils, and may be punctured with a common lancet, in the same manner as a vein, and afterwards secured in the same way. But when opened for furious delirium, there is no necessity for securing it; the collapsion of the artery will take place soon enough, and often so soon as to require the opening of the jugular. Bleeding in the mouth is seldom resorted to by the regular bred veterinarian, as no good but under one circumstance can possibly be derived from it. It is, however, the sheet anchor of every common vulcan of this country; for let what will be the matter with their horse, bleed him in the mouth is the common cry; and little do they know the danger of even attempting to bleed in this part; for it should be understood, that between the fourth and fifth bar of the superior maxillary or upper jaw, there is an opening or hole in the bone, through which the palatine vein and artery runs. These are very large, and when

wounded, very great hæmorrhage is sure to follow, and is often attended with very serious consequences from the great difficulty of stopping it, which only can be done by one way, and that is the actual cautery. Under no circumstances but one would I ever be induced to open this part, and that is when a horse is labouring under very strong delirium and madness in staggers; for I know of no disease that requires more profuse bleeding: and to show the violence and danger with which it is attended, I will relate the following case that came under my eye during my residence in India.

A very fine horse, the property of sir Charles Blunt, was attacked with this complaint, and when I first saw him he was labouring under such a high state of madness that twenty men were unequal to the task of holding him. Under these circumstances, as he was literally knocking himself to pieces, I availed myself of a favourable moment, and pulling the tongue from the mouth, I divided the vein and artery; the hæmorrhage was very profuse, and the horse bled till he dropped for dead. I then seared the part with rosin and aloes, and left him in this weak state for several hours, when he got up. By proper attention, use of medicine and other necessary aid, the horse recovered.

In another case similar to the above, I opened the jugular on both sides of the neck till syncope took place; and the other necessary aid being applied, the horse also recovered.

In bleeding in general, the quantity drawn should always be measured; this may be easily accomplished by receiving the blood in a proper graduated pint or quart tin measure. In a very high and active state of inflammation, such as Staggers,

inflamed Lungs, Founder, &c. never less than five, six, seven, eight, and sometimes even ten quarts of blood, should be taken away; but when extensive and profuse bleeding is necessary, it should be done by those who know how to judge of the state of the horse, heaving of the flanks, &c. &c.

In all important inflammations it is of consequence to draw the blood from a large orifice, and that as quickly as may be; the increased action of the vascular system appears to be more readily checked by a sudden evacuation of blood, probably by a sympathetic effort by which the vessels recover their tone by a hasty depletion.

It is necessary to remark here, that all blood, when first drawn, presents indications that should not only be attended to but studied. When blood is taken from an healthy subject, and suffered to settle or coagulate without disturbance, it soon separates into two portions; one is fluid and yellow, called the serum; the other forms itself into a jelly like substance, and swims in the serum: but when the subject is labouring under inflammation, or inflammatory disease, both these parts undergo alteration, and exhibit different appearances to what they do in health: in violent inflammation the quantity of serum is small, and not particularly altered in colour, though sometimes it is milky; but the cruor or crasamentum, which is the jelly like cake in the centre, instead of being easily broken, becomes tough, and instead of being of a bright scarlet, its surface is yellow for two, three, or more inches of its depth. Such blood is called sizy, and exhibits great marks of inflammation, and thereby becomes a very important monitor for us to repeat the operation so long as the same appearances

last, provided the horse's strength will bear it. When, on the contrary, blood is drawn which exhibits much serum, with the coagulum red, but thin and without tenacity, we are warranted in considering it a case marked with debility, in which a repetition of bleeding would be dangerous.

Although a vein is not strictly a circumscribed cavity, it has no communication with the air, and when once exposed, if the parts after the operation do not unite by the first intention, the vein is liable to great mischief. The treatment under such circumstances will therefore appear from the following cases which occurred at the London Veterinary College.

A horse was admitted on the 30th of August which had been bled in the jugular vein on the near side six days before; the orifice of the wound was much inflamed and swelled to the size of an apple; it also discharged, and frequently bled. On further examination with a probe, the cavity of the vein was found open; the actual cautery was applied to the lips of the wound, which immediately prevented any further discharge of either blood or matter.

On the 1st of May—Suppuration took place from the same wound; the cautery was repeated; and again stopped as before.

2d.—No discharge from the vein, and the neck was ordered to be fomented with warm water.

3d & 4th.—No discharge; fomentation as before.

5th.—The wound discharged a small quantity of matter, and the cautery again applied. The next day the animal was sent for, and as the swelling and inflammation had abated, he was suffered to be taken from the College.

10th.—He was again returned to the College, and on inquiry it was found that by some accident the coagulum was torn from the surface of the cavity, and the discharge considerably increased; the inflammation and the swelling extended up the vein as high as the head The cautery was again applied, and the discharge stopped. The horse was bled from the opposite vein and a dose of physic given, which operated the next day.

15th.—The wound again suppurated, and the cautery was repeated to a greater depth.

16th & 17th.—No discharge; the tumour was blistered, and by the 18th much reduced.

19th.—The granulations protruded through the orifice, but no discharge. A small quantity of powdered vitriolated copper was sprinkled on the part.

21st.—A small orifice was observed in the centre of the wound from which matter discharged, and on introducing a probe the cavity was found superficial. A drachm of the same copper in solid form was introduced into the wound, and a large poultice applied over it.

22d.—The neck was fomented with warm water, and the poultice repeated.

23d.—The inflammation and swelling gradually abated, but the orifice sloughed and again suppurated; the cautery repeated as before.

24th.—A small discharge from the orifice, and the cautery again repeated.

26th.—The surface of the wound sloughed, and healthy granulations appeared; the wound was afterwards dressed

with simple ointment, and the granulations sprinkled with blue vitriol.

Under this treatment the horse was discharged from the College on the 10th of June, radically cured.

CASES AND DISEASES;

UNDER WHAT CIRCUMSTANCES THEY REQUIRE BLEEDING.

The cases and diseases that require bleeding, are those under which active inflammation is going on, and its consequences; for instance, wounds and sprains of the muscular or tendinous parts, bruises, &c. It is also proper in the beginning of all disorders or cuticular eruptions of the skin; in large swellings of the body or legs, arising from a plethoric state; and in swellings of the legs and heels, which are attended with much inflammation. Bleeding is very often the speediest method of giving relief in the beginning of fevers, to which horses are very liable; it is also necessary in acute pain, as in gripes, colic, strangury, or suppression of urine; in rheumatic affections, where pain causes either lameness, stiffness or contraction of the muscles, which by farriers are commonly called the cords; in inflammation of the eyes particularly, the lungs, the liver, the bladder, the stomach, the intestines, and other viscera; in apoplexy, vertigo, or giddiness, &c. On the other hand, people in this country should be cautioned from bleeding so frequently on the road as they do in hot weather, and then only under urgent cases should we have recourse to it.

The *Bursæ Mucosæ*, are the bags called Wind-galls, &c. whose office is to emit a lubricating mucus, to facilitate the motion of the tendons of the animal body, when they play one upon another, or upon bone. Men not acquainted with the anatomy of parts, or the function of mucous capsules, open them to let out the fluid. The immediate effect of this absurdity, is the total disappearance of the tumour; and if the edges of the wound do not unite by the first intention, violent inflammation immediately takes place, and death is very often the consequence: the only mode of shutting or stopping them is as related in the before mentioned case, the *actual cautery*.

During my residence at the Veterinary College, Mr. William Sewell, the assistant professor, was called upon to visit a horse belonging to a gentleman, and on examination he found one of the mucous capsules between the flexor tendon or back sinew, and the long ligament that supports the two sesamoid bones opened by some accident that had happened two or three days before. The leg was considerably inflamed and enlarged above the knee joint, attended with a considerable discharge. The cautery was applied to the surface of the wound, and fomentation and poultices to the legs. A purgative was given, which operated well, and on the fourth day the discharge of synovia again appeared, but the cautery being again repeated, in less than twelve days the discharge stopped. The leg, however, continued to swell, and being inflamed, a liquid blister was applied from the fetlock to the bend of the knee, and diuretics given every night and morning. When the blister had ceased to discharge, to keep the parts moist and preserve the hair, a cold poultice of bran was ordered with a second dose

of physic, which, by the assistance of another blister, completed the cure. The horse was discharged in one month perfectly cured and sound.

OF WOUNDS IN THE VEINS,

AND THE

MORBID CONSEQUENCES OF BLOOD-LETTING.

When a large vein is divided, it should be secured by a ligature above and below, or the anastomosing branches will continue bleeding; but when the smaller veins are divided they stop spontaneously. A divided vein will again unite and become pervious, but an artery will not. There very frequently follows serious consequences from blood-letting, which are of two kinds: the one shows itself by simple effusion of blood from the punctured vein into the cellular substance, occasioning inflammation in the parts around; and another where the vein itself takes on inflammation (as in the before mentioned cases) from a puncture through the opposite coats, or perhaps from causes we are unacquainted with. In the first of these cases there occurs a *thrombus* or *ecchymosis*, (an effusion of blood under the skin) from an effusion of blood into the surrounding cellular substance, originating frequently from an improper mode of *merely closing* the cavity or orifice. In bleeding the operator generally draws the skin too much out in order to introduce the pin, by which means the blood becomes effused; or sometimes the openings between the skin and coats of the vein are not correspondent, which produce

the same effect. Whenever this takes place, press the effused blood carefully with the fingers, and if the bleeding appears not likely to come on again, put no pin at all; and if one has been introduced, remove it and let the horse be watched, and his head tied up; and in all cases remove the pin in twenty-four hours, (better to watch the horse for two or three hours, than have a swelled neck, which may be attended with very serious effects, at all events a great deal of trouble) as that alone will frequently irritate and do mischief. If this effusion should occasion after inflammation, apply a cold solution of sal ammoniac and vinegar to the part, or a solution of sugar of lead. If the effused blood should afterwards fluctuate, or matter form, make a depending orifice to form a seton, or use the other remedies as before named in those cases. It is not uncommon under the before mentioned causes, that ulceration often proceeds and sinuses form; still the morbid action extends, and sometimes the parotid gland becomes swelled and tender; the whole neck also becomes stiff and painful, and the animal experiences a difficulty in eating and drinking; at other times the disease proceeds downwards, and inflames the whole course of the vein till it reaches the heart, which soon destroys the animal.

Treatment.

We should, under these circumstances, direct our efforts towards saving the vein. When the disease first appears, it may very often be stopped at once, by a single application of the budding iron (not too hot) to the outer edges of the wound.

It will, however, sometimes be necessary to apply this for two or three days, until the oozing or moisture ceases. If, however, the tumour increases, proceed as before directed.

OF BROKEN KNEES.

Broken knees is a term sufficiently common among horsemen and farriers; and though the treatment is referrible to the direction of wounds in general, yet my readers will expect some direction for these cases, which so frequently happen.

Horses when they fall extend their knees forward to save their head; and as the fore parts usually descend with great violence, so there happens very commonly some laceration of the integuments or skin of the knees. When this extends into the cavity of the joint, which may be known by the extreme lameness and swelling of the parts, as well as by the flow of a particular slippery mucus, called *joint oil*, very different from the common matters that issue from wounds, the case must be treated exactly according to the rules so fully detailed under wounds or open cavities of the joints; but when there is only simple laceration of the skin of the knee, treat according to the extent of the injury. However, great or small, let me beg and advise that you carefully abstain from the heating applications of what farriers call *hot oils*, which are generally composed of such irritating materials, that a man might as well throw gunpowder or brimstone into the fire to put it out, as to apply any

such remedy. Sufficient inflammation will ensue without such aids, or the torments of turpentine, ardent spirits, vitriol, &c.*

* It is literally true, that every book on farriery, written *before the establishment of the Veterinary College*, is erroneous as respects the treatment of wounds in the joints. No one, I presume, will suppose that any disease can be successfully treated, without a due combination of theory and practice, directed by skill and sound judgment; for they mutually support and correct each other. Without these two essential points, nothing but error will be the consequence. In order, therefore, to justify the opinion which I have so often advanced against the erroneous method of shoeing, as now so *bunglingly practised* by almost every smith in this city, and throughout the United States, let us now consider the practice of the common farrier in the case of open joints. We shall soon see that his science consists in the method of injecting into the cavity of the joint corrosive mixtures of all kinds, but more particularly a mixture of turpentine and oil of vitriol or corrosive sublimate, dissolved in lime water or tincture of myrrh. Now let the common sense of every man who has a slight knowledge of the nature of those *soft, bland, emollient articles*, determine, whether the devil must not have put those things in the farrier's head—for surely it must be nothing but the height of madness for a man to think of applying such hot, irritating substances to the joint of a living animal.

These compositions, however, are considered among the illiterate as a secret, and these men, under the assumed title of veterinary surgeons and professors of horse medicine, even offer them for sale at high prices; while on the contrary, every judicious observer will and must see, that any corrosive infusion put into the cavity of the joint, can have no other effect than to produce the highest state of inflammation and swelling, which increases the violence of the symptoms in spite of their *grand secret*. The consequence is, that the upper part of the limb wastes and decays, and the poor animal suffers under their *unpardonable ignorance* until the grim monster death closes the scene of misery.

A gay young buck of this city who assumes to a knowledge of these things, though perhaps ignorant of the quality of five medicines in the whole

If the wound be large and the laceration extensive, and you suspect sand, dirt, or any foreign substance to be within, wash it with warm water, and apply a saturnine poultice. But if no foreign substance is within, never wash the wound; the lymph of the blood being the best *natural balsam* you can possibly apply: the part, however, may be touched slightly with a little tincture of myrrh and aloes, which will be found sufficient. Turlington's balsam is also one of the best applications to wounds of this kind (where suppuration is not wanted) you can apply. But to those who have horses for sale, to prevent or lessen the blemish, is as much a consideration as to heal the wound itself. Three circumstances are therefore desirable: to bring the hair on, to bring it on smooth, and to lessen the scar. Nothing therefore tends so much to obtain these ends, as to avoid the common farriers' heating applications; and, in addition to this, so soon as the part is actually skinned over,

materia medica, applied to me in a case of this kind. The actual cautery and fomentations, with the usual applications, were accordingly applied. The horse was in a great deal of pain, and literally stood on three legs, though he had then been in the infirmary a week. On coming one morning to the stall, the gentleman cried out, "Where is the doctor? (the inflammation having sufficiently abated to warrant the application of a blister it had accordingly been done,) doctor, what the devil have you been about? why, you have been blistering my horse?" Yes, sir. "Why, you are a madman—who the devil could dictate to you so absurd a thing?" Years of study, and the practice of some of the first medical men, warrant what I have done. "O that be d——d; you know nothing at all about it; and I shall take my horse away, if he is not well by to-morrow."

Let the cap fit where it applies. Boys must not presume to dictate to men of experience, who have spent thirty years of a life in acquiring a knowledge of these things.

apply a mild blister—nothing will produce hair sooner; it absorbs the edges of the scar, and by removing the old hair, it *stimulates to the reproduction of the new of one colour;* and this very simple application, and the way to apply it with proper effect, is what many a man would cheerfully give pounds sterling to know. Many recipes are given to produce new hair; but most of them are useless. Nothing acts specifically in this way; but whatever gently stimulates the skin, may assist generally. But remember, never apply the blister before you are thoroughly sensible it has cicatrized, or skinned over. Apply therefore the following:

Take Venice turpentine . . . . one drachm.
Goose grease . . . . . one ounce.
Mix with the white of an egg.

OF OVERREACH.

This sometimes happens from weakness, but very often from bad shoeing, leaving the toes of the hind foot too long. It is usually a blow inflicted on the heel of the fore foot by the toe of the hind one. But when it strikes the flexor tendon or back sinew, it produces inflammation, which requires no variety in treatment. Remove the cause, and the effect ceases.

STRAIN OF THE STIFLE JOINT.

The ligaments of the patella, or stifle joint, may be strained or inflamed by violence or blows. And as the former affec-

tion may arise from a variety of causes, it may be easily distinguished by a peculiar dragging of the limb; and this may always be known by the *circular direction* in which the leg is carried during motion, purposely to avoid bending the joint. The heat and tenderness will also serve to guide the practitioner in this instance.

Sometimes the muscles of the thigh, and not the joint, become extended, and produce the lameness; in which case, the tenderness will be found within the groin, and not around the patella or stifle. The treatment, however, is no wise different from the former, except that sometimes a rowel inside the thigh has benefited this, but is of no service in the other.

OF THE PUMICED FOOT.

This is a very common affection of the foot, and is the very reverse of concave feet. It is also a very common effect of both acute and chronic founder; an account of it very properly following the affection called Founder.

Pumiced feet is in many instances the effect of inflammation both of the sensible and horny laminæ, and the vascular increase may be an *acute* or *chronic* one. When they are the effect of the former, the complaint immediately follows an attack of acute founder, and is brought about by the very same causes; but when produced by a slow chronic inflammation, its attack is much more insidious and slow, and its approaches gradual; the front of the foot is observed to fall in, and the

sole to become nearly flat, at which time the animal begins to falter, and is sometimes very lame, at others can move tolerably well. Mr. Coleman says, that the large wide feet of horses bred in marshy, low, wet countries, are the most subject to it; and such feet are but ill calculated to stand the battering of pavements or hard stony roads. Nor is the inflammation producing this evil altogether the same with that which contracts the foot; for in most cases the former is attended with an over increase of horn, whereas the latter is attended with a decrease of horn, and both the walls, as well as the sole, become thinner. The sensible and horny laminæ, as before observed by Mr. Coleman, lose their elasticity, and do not secrete horn; but a considerable quantity of diseased substance, which, with the weakened structure of these supports, displaces the coffin bone, drawing the crust with it, and greatly increases the natural obliquity of the hoof, and the pressure that the coffin bone, thus displaced, makes on the fleshy sole, occasions an absorption of its own. The sole, therefore, unable to support or resist the superincumbent weight, loses its concavity, and thereby yielding to the altered parts above it, bulges into convexity, and becomes deranged in structure as well as situation.

Treatment.

The treatment of such feet can only be palliative, as a removal of the deformity has never taken place. Blistering the coronet will, in the incipient stage of this disease, stimulate the foot to an increased secretion of horn. Mr. Coleman uni-

formly advised pressure on the sole, by causing the animal to stand on a flat marble slab placed in front of the stall, and the feet placed in pitch. This is condemned by some, and is wholly avoided by others as being too painful, and thought to aggravate the disease. Pumiced feet should not be kept too moist, and the bath is but ill calculated to restore them. The circulation in those parts being but naturally slow, the bath would increase the evil, nor can they ever be cured by turning out, without shoes.

The shoe mostly used for such feet is generally a broad-heeled shoe, which is made to fit the web, and bevelled away in the inner surface to receive the convexity of the sole, without pressing on it; however, to make the best of a bad bargain, such feet are only fit for the ploughed field.

OF FIRING:

AND HOW TO PERFORM THE OPERATION.

The operation of firing is important, and a good and salutary agent, in the hands of those who will use caution and discretion in its performance. The practice of firing is as old as Methuselah, and from time immemorial has been known as not confined to quadrupeds only: on the contrary, among the Africans and many of the Hindoo race, it has been practised for centuries past, and even to this day is generally used among themselves as well as their cattle for the prevention of many diseases; and in many parts of India, on the Ganges, is by the Brahmin physicians applied, instead of

our blister, over the abdomen, for the cure of the cake ague, as so called by them, and which is nothing more than a schirrosity of the liver; they also use it for white swellings and numerous complaints; nor would it be difficult to prove, as is observed by a celebrated practitioner of the day, professor Blane, that we have no remedy among us, except mercury, that can compensate for its disuse. Firing is performed on horses for two purposes; one for performing a permanent bandage to a part, which it does by destroying the elasticity of the skin, and the other is to produce an active inflammation, and thereby excite absorption; and it is even common to this day among the Arabs, to fire the joints of their young colts, under the same idea as was some years ago practised on the English turf, to strengthen their limbs; and I have seen them, as well as the Hindoos, perform this operation in various ways all over the carcass of their horned cattle while very young. In Splints, Spavins and Ring-bones, it is used as a strong stimulus to force the surrounding vessels to remove by absorption the substances deposited. The various cases in which firing will be found useful, are particularly detailed in this work; it is, therefore, quite unnecessary to enumerate them here. It is true, I have seen this operation performed on horses without even their flinching, at the same time it need only be remarked, that as it is a painful operation, so it should never be resorted to but when absolutely necessary. When absorption only is required, blisters may be used, as they act in a similar way, which renders the other operation quite unnecessary. I have stated in a former part of this work, that blistering is often necessary immediately after the cautery; but it is only

admissible in certain circumstances, and in common cases may be avoided. The practice of the College is, to fire and not repeat the blister till the third, fourth or fifth day, according to circumstances; and the operation of firing in that school is conducted differently in different cases. Mr. Sewell generally fires in straight lines, and they may be perpendicular or horizontal, but should never cross each other: however, do it which way you will, the intention is the same; but the College recommends the lines to be perpendicular, and these I have invariably found to be the best, excepting in cases of breaking down as farrier's call it, or rupture of the suspensory ligament or tendon: in this case I have for many years followed the practice of the Arabs and Hindoos, which is to fire vertically round the affected limb, in which case you had better suspend your horse's legs in the air, or rather truss him up with bundles of straw, with his back under a beam; and in this way you can the more readily work around the affected limb. In firing the pasterns I generally do it in a penniform manner, as represented figs. 3 and 4, plate II; but in Curbs, Splints, and Spavins, I generally carry my lines at angles, avoiding the cross fire if possible. The stifle is usually done the same; but that of the round bone or articulation of the thigh, is generally made to represent a star for neatness. In ring-bones the lines of fire, by one of my worthy instructors, Mr. Bracy Clark, is recommended perpendicularly, and about an inch and a half apart. This is the most handsome firing operation I ever saw for neatness. However, when the principle of the operation is understood, the form and direction of the lines may be left to the fancy of the operator. According

to the parts to be fired, so different formed irons are used; but the principal is the searing iron, the budding iron, for cavities in the neck after bleeding and open joints, and the common firing iron, all which should be made sufficiently thick to retain the heat, and should never be heated to a *white*, but a *red heat* only.*

In firing in lines care should be taken that by repeated heating the iron does not form too sharp an edge, or the skin may be fired through, and then you have a permanent blemish. However, to prevent this, after each heating the iron should be rubbed on a smooth board, to round it, and also to loose the *scoriæ* or roughness that may be attached. The best mode of heating your iron, is to have three or four in the fire at a time, and that made of charcoal in a chafing-dish, or a hole in the ground, and that also near the operator. This will save trouble, and expedite the business. I must, however, again particularly caution the operator, that under no consideration to fire through the cuticle; for if the cutis or true skin is wounded, inflammation and ulceration follows; and to prevent this, if your iron is very hot, press it more quickly and more lightly, but as it cools more leisurely and with more pressure. All Ring-bones and Bone Spavins require the severest firing, but

* On this subject of heating the iron, simple as it may appear, I could write pages for the instruction of the smith in this branch of the shoeing trade, if I only thought he would benefit by it, there being no one part of his profession that he should study more than the proper temperature of his iron, for every kind of work; but when you point out these things for his better information, finding there is more labour attached to it, he kicks immediately, and calls you a d——d fool in the bargain.

even in these cases never go through the skin; though I have in some instances seen, and I believe this is professor Blane's (a nice operator) practice, purposely to perforate the skin, yet he does it, I am informed by Mr. Youatt his partner, only in very bad cases, and then as a desperate remedy, which always excites very high inflammation. The best mode of judging of the depth of your fire is the colour, which should be a yellowish brown, not unlike buckskin breeches; and in all cases the hair should be cut close, for without this precaution, the smoke from the hair impedes the sight; and to draw them correctly, Bracy Clark's invariable rule is to have chalk lines, and so pass the fire over them, and when the weather is very hot, and you do not want to blister the part, nothing more is necessary than to rub a little tar on the blistered part, and then apply shag cullings of tow to keep away the flies, after which, in a day or two, you may apply some hog's lard, or other grease to prevent the cracking of the skin.

OF SELLENDERS AND MALLENDERS.

Mallenders is generally termed a cutaneous disease, and is mostly confined to draught and heavy horses. It is an inflammation of the integument below the hock, which occasions cracks, from which ooze a fetid matter, and is generally produced by an obstruction of the perspirable cutaneous and capillary vessels of the skin, from want of cleanliness, friction, and proper grooms.

There are a variety of modes of cure; but that which I have ever found the best, though not exactly conformable to the College practice, is to clip off the hair, and wash off the scurf with soap and water. Then apply the following ointment:

Mercurial ointment	4 drachms.
Camphor	1½ do.
Burnt alum	2½ do.

Honey, Q. S. *Mix.*

OR,

Alum burnt and pulverized . .	3½ drachms.
Zinc, or white vitriol	5 do.

Molasses, honey and lard Q. S. to mix into an ointment.

Sometimes a purgative or a diuretic ball is necessary.

When this disease of the integuments exhibits a scurfy or scabby eruption at the posterior bend of the knee, it is called Mallenders, and when it appears at the bend of the hock in front, it is then called Sellenders. They neither do harm nor cause blemish, though sometimes troublesome to remove. The College treatment is:—

Subacetate of lead, or sugar of lead, or ex saturn, whichever you please to call it .	1½ drachms.
Camphor	2 do.
Ointment, mercurial	1 ounce.

Mix and wash.

FRACTURED BONES

OF THE EXTREMITIES.

On this subject but little can be said, excepting that if the horse be a stallion, and of great value, every mean in the power of man should be devised to set and unite the parts by strings, bandages, &c. For a blood brood mare the same will apply—if not, destroy her.

OF A STRAIN

IN THE JOINT OF THE WHIRL, OR ROUND BONE.

A celebrated author of the present day observes, as chest founder covers all other defects of the fore limbs, so are all lamenesses behind referred by farriers of the old school, to either a strain of the round bone or stifle joint, as their fancy leads them to favour the one or the other, and improper treatment may sometimes injure the ligaments of the articulation of the thigh with the pelvis.

Treatment.

From the very deep situation of the parts, the cure is generally attended with some difficulty. It will therefore be highly necessary to foment, or apply saturnine lotion till the inflammation is reduced; after which, blister actively. It is not improbable, that the practice of pegging, as formerly practised by the older farriers, might here prove, from the depth

of the affection, to be a useful stimulant, if properly applied. But if the parts do not readily reinstate themselves, fire over the joint in a star like form, blister, and when this is healed, apply upon the part a charge of pitch, aloes, and turmeric, each of equal quantities, melted over the fire with strong brandy or spirits of any kind, and reduced to a thick liniment or paste, to which a little rosin or wax may be added to make it stick.

AN ARRANGEMENT

OF THE

PREVALENT DISEASES

OF THE

HORSE, AND OTHER QUADRUPEDS:

WITH THE

REMEDIES MOST PROPER FOR THEIR REMOVAL.

BLISTERING OF HORSES.

Blistering of horses is of great advantage in inflammations, to remove old swellings, strengthen old weaknesses, and to take away Splints, Curbs, Spavins, &c. For all these the blistering ointment will be found excellent.

BREAKING DOWN.

Breaking down may be much assisted by bathing the parts well with the veterinary opodeldoc, or embrocation for strains; and when the heat is removed, apply the blistering ointment, or bath, with liquid blister.

OF BROKEN WIND.

Cough balls and blistering the wind-pipe, with regular regimen, plenty of carrots, potatoes, beets, &c. will sometimes, in the early stages of the complaint, remove it; but when confirmed, and the air cells of the lungs become ruptured, there is no remedy.

OF COLDS.

When a horse has caught a cold, the fever powders will remove it; but should great weakness and debility remain, give the cordial fever ball.

CONDITION.

When horses are out of condition, warmth, and the alterative condition powders, will restore it.

CORDIALS.

When cordials are necessary, give one of the cordial balls.

COUGH.

When a horse has a cough without fever, give a course of cough balls and he will speedily get relief.

OF CURBS.

A Curb is generally removed by one or two blisters of the blistering ointment, though they sometimes remove themselves.

DIURETICS.

Diuretics are excellent cleansers; they not only promote condition, but remove swelled legs, and are also good in strangury or obstructed urine or gravel.

EXERCISE.

Exercise is of all things essentially necessary to horses, but when from lameness or bad weather they cannot go out,

they should be well hand rubbed, and one of the diuretic balls given each other or third day, which will keep their legs fine.

OF THE EYES.

When the eyes are swelled from inflammation, relief may sometimes be obtained from the eye water; but when from blows or bruises, sometimes hot and sometimes cold fomentations will remove it.

OF FISTULA SORES.

All fistula sores, or pole evil, those of the withers, &c. may be removed, if not very inveterate, by injecting into them either the liquid sweating blister, or mild wash for Grease; but when they have become very inveterate and foul, the strong paste for Grease must be melted and scoured in.

OF CLYSTERS.

Clysters are under almost all circumstances useful to horses. Various forms of them will be described.

OF GREASE.

Grease, in its early stage, may be cured by the mild wash or astringent ointment; but when become inveterate, the strong paste for Grease is necessary, with other diuretic medicines.

GRIPES OR COLIC.

Gripes or colic may be removed by clysters, raking, and the proper diuretic ball.

HIDE-BOUND.

Horses hide-bound should be treated with a course of alterative balls and condition powders, which with good grooming will generally remove the complaint.

JAUNDICE OR YELLOWS.

This is a liver complaint, and may always be removed by a few doses of mercurial physic.

LAMENESS.

Lameness, when arising from strains, may always be removed by the application of the veterinary opodeldoc, or embrocation for strains, or the liquid blister; when it arises from Splints, Bone Spavin, Blood or Bog Spavin, Ring-bones, or other causes, the latter will be found to be the best, but particularly where firing is necessary.

MALLENDERS OR SELLENDERS.

Mallenders or Sellenders can always be removed by the Grease paste or ointment.

MOULTING.

Moulting, in the spring of the year, has very often on the constitution of some horses a very severe effect, in rendering them faint, weak, and incapable of going through their daily labour. The alterative balls given every night and the cordial balls every morning will remove them.

OF POULTICES.

The beneficial effects of these, under their various forms,

will be found very useful, as described under their several heads.

PHYSICKING OF HORSES.

Physicking of horses, although sometimes necessary and useful, yet if constantly practised in the spring of the year, it frequently proves injurious. For swelled legs, for grease, hide-bound, &c. the balls will be found very useful; they are of various sizes and strength, as enumerated in this treatise.

QUITTOR.

Quittor may be cured by the knife, and the introduction of some of the Grease paste or other applications, as enumerated in the work.

RING-BONES.

Ring-bones may be removed by firing and the blistering ointment.

SPAVINS AND SPLINTS.

These may also be removed by the same applications.

OF STABLES.

The economy and ventilation of stables will be largely treated of in the body of the treatise.

STRANGLES, CATARRH, AND INFLUENZA.

These are nearly synonymous, and will also be treated of very largely in the body of the work.

SURFEITS.

Surfeit may always be removed by a course of alterative and condition powders.

THOROUGHPINS.

Thoroughpins may be removed in the same way as Splints and Spavins.

RUNNING THRUSH.

Running Thrush you will find treated of very largely in the work.

WIND-GALLS.

Wind-galls may be removed by a little blistering ointment, the embrocation for strains, and bandage, &c. For their total removal, you must fire; but they are most generally an eye-sore, and should never be touched.

OF WORMS.

Worms are very troublesome to horses, and sometimes dangerous; they may be removed by mercurial physic, and the worm powder sprinkled on the food.

THE MEDICINES

FOR

The Ox, the Cow, the Sheep, and the Dog,

Will be treated of in the work, and the proper quantities specified. The doses must not be so large as for the horse; treatment nearly the same.

FOR THE DOG.

A course of alteratives is very useful for dogs, in removing the mange, killing worms, and promoting their condition as well as cleaning their coats.

CANKER IN THE EARS OF DOGS.

This disease may be easily cured, by pouring on the wash for canker in the ear.

CONDITION OF DOGS.

When dogs are out of condition from mange, foul feeding, foul coats, worms, &c. they may be brought round by the mange condition powder or bolus.

DISTEMPER IN DOGS.

Distemper is a term very much confounded and misunderstood in dogs as well as horses. The distemper powders will remove it. But this complaint, being a very interesting one, will be treated of more largely.

MANGE IN DOGS.

Mange in dogs, in all its varieties, may be cured by the application of the mange ointment.

PHYSIC.

The best physic in the world for a dog is castor oil, or the condition physic.

WORMS IN DOGS.

Worms may be removed by the worm powder.

ON CASTING HORSES;

WITH A DESCRIPTION OF THE NEW HOBBLES,

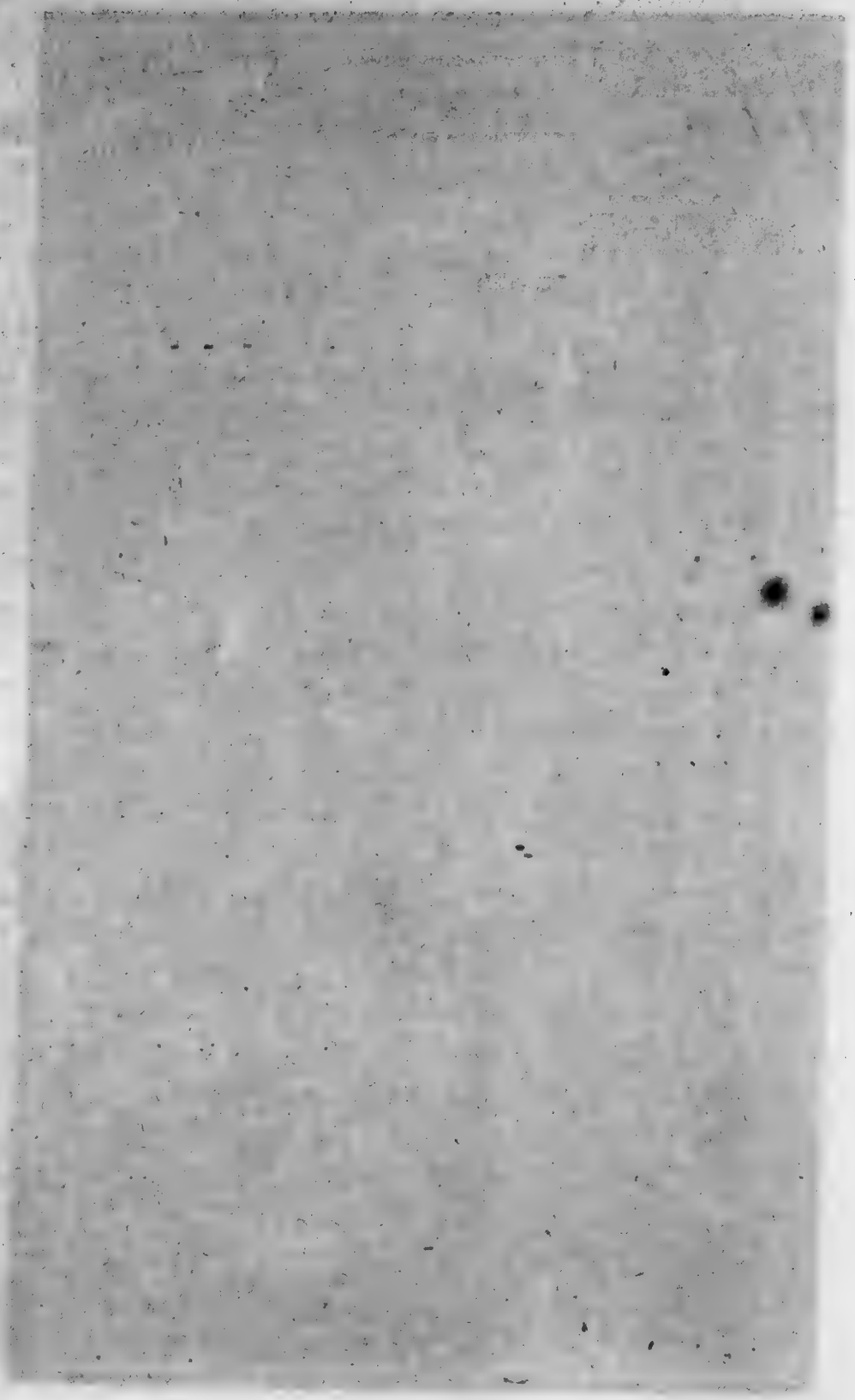
By Bracy Clark, F. L. S.

This improvement in the apparatus for casting down horses, and better securing them for operations,* presented itself to me about six years ago; the great advantages of this plan having been fully confirmed by frequent use during this period, I have been induced to make it more publicly known.

In casting horses after the common mode, some straw, enclosed in a knot, was used to form an obstacle to the return of the rope through the four rings, and, in order to insert it, it became necessary to relax the rope for a time, during which, if the horse struggled, he would draw the cord back through the rings, and sometimes get upon his legs again, a circumstance we have seen to happen; this imperfection is

* Although we have treated largely on the subject of firing in the body of the work, it is necessary to remark here, that fig. 1, in the plate, represents the direction of cross lines, and although they sometimes are preferred, I myself do not approve of them, and my reason is this, I seldom or ever saw lines drawn in this *cross direction*, but if the iron happened by accident to go too deep, that the square did not sluff and leave a permanent blemish. To fig. 2, this is also applicable.

In firing for a Curb or Spavin, I should recommend the iron to be drawn in lines like fig. 3, on each of the lower and posterior parts of the hock. For Wind-galls I would also do the same. The straight lines, as represented in fig. 5, are very good. When a horse is to be fired in both legs, it matters not on which side you cast him. As respects circular rings round the leg for Wind-galls on the pastern, it is a method uniformly practised by the natives of the East, of which I have witnessed the best effects. Remember, that when you do this, your rings should never exceed an inch, and if a little closer the better.



wholly removed by the present apparatus. The knot of straw also drawn tighter, and condensing by the struggling of the horse, would give a degree of liberty to the legs that was often inconvenient in performing an operation, which is also removed by the present apparatus, which can be drawn as tight as you please, and afterwards is subject to no relaxation. But a much greater advantage than the foregoing, is, that all the four legs are released at once, and the inconvenience and risk of undoing a leg at a time, after the old mode, is entirely done away. The friction and strain of these new hobbles is chiefly confined to the iron parts, which gives them a duration in wearing that is almost endless. The iron chain terminating the rope, is found to pass or slide through the rings with less friction, if well made, than a rope would do; and, by the use of the steel rollers, it requires much less force, or fewer men in casting the horse.

The apparatus itself is represented in the plate annexed, and the following brief description will enable the reader to form a correct idea of the nature of it:—One of the hobbles, it will be observed, is made different to the rest, which we call the principal or master hobble; it is seen on the near fore leg, and is always to be placed or fixed on the fore leg of that side of the horse that is designed to be uppermost when on the ground; the end of a chain is fastened to this hobble by means of the moveable pin (A), which is prevented from falling out with any agitation of the apparatus, by having two or three turns of a screw in its upper part, under the thumb piece (A). The chain (B) terminates in a swivel, received into the notch through which the pin passes, and the links of this end of the chain are made open and plain, for receiving the hook for fastening him; the rest of the links are twisted and made shorter to run more readily upon the rings; to this chain is attached a cord (C); we have preferred one of those which are called the patent ropes, being plaited of strands of equal tension, and are found not only stronger but more flexible

than the common ones. At the extremity of this cord is attached, for convenient use and to prevent its being lost, the oblong curved hook of iron (D).

It would appear almost needless to describe the manner of using or applying the apparatus, as it is so simple, and the plate so plainly indicates it; it is evident, that on drawing the rope, the legs are forced together, and he is made to fall, some straw being placed on the ground to receive him: he is no sooner down and the feet drawn together, than the hook (D) is passed through one of the open links of the chain, which, as it cannot then return back through the perforation in the plate (E), he becomes perfectly fixed, and nothing further is necessary; and far more conveniently and effectually, than by any noose or knot that could be devised.

The operation being performed, the removal of the pin (A) sets him at liberty again, as the extremity of the chain can then pass without impediment through all the rings.

We may observe that each hobble ring, except the *principal*, is provided with a steel roller or case of plate-steel, which, turning readily upon the iron, serves to diminish the friction, though it has been found, if made simply, of a large half-round iron ring, in which way this apparatus has been several years used in the king's body guard, to answer particularly well, yet we think the rollers preferable; and it may not be without its use to remark, that if the steel moveable cases or rollers are resorted to, they should be made of very stout plate-steel, so strong that the chain should not, in passing through the rings, or in the struggles of the horse after he is down, be subject at all to force or indent them, which would render them perfectly useless.*

Some persons have expressed a desire, that not only the

* Dr. Carver has appointed Mr. Dixon, saddler, in Market street between Seventh and Eighth streets, his agent for making these hobbles, Dr. C. having supplied him with a complete model for that purpose.

legs should be set at liberty when the chain leaves the hobbles, but that the straps also should disengage themselves from the legs; a proposition that appeared truly difficult; nor will this circumstance, in actual practice, be found of so very great moment as might be imagined; however, this difficulty we have overcome, and the proposition is fully accomplished, by the use of the hobble, fig. 2, having no buckle at all, but is furnished with two rings, attached to the two ends of the strap, which, with the ends of the strap, fly open as soon as the chain is drawn away and falls from the legs. The little chain and hook (K) serves to hold the two ends or rings together about the leg, during the introduction and passing of the chain; there is provided also to these rings, moveable rollers, both to the upper as well as front parts, which are found greatly to assist in destroying the friction, the chain having, during the draught, a strong pressure upwards.

As casting the horse adroitly will greatly recommend the veterinary practitioner in the eyes of a discerning spectator, so we shall subjoin a few hints and cautions which practice has taught us for effecting it more easily and with less risk of accidents or injuries.

With high-spirited, shy, or skittish horses, the four hobbles cannot be applied with too much expedition; there should be a man to each leg, and the rope previously passed through the rings, and made fast to the pin, with men ready at the rope in case of any sudden movement or struggling on finding himself hampered, to pull him down immediately, and prevent his moving from the spot; and, on all occasions, the horse should be blinded previously to the hobbles being applied, and a twitch to the nose or ear is also useful to divert his attention. The blinding-hood should be of a very coarse, thick cloth, and made to cover the head and upper part of the neck, with ties below of ferret or tape; it is best applied by being laid upon the crest and gradually advanced forwards over the head and eyes, and then tied, which is always to be

undone, but not removed till he is fully at liberty for getting up. The smith's apron usually was resorted to in these cases for blinding; it is but a very uncertain and indifferent blinding-hood. This hood cannot be made of too thick materials, as it may be very useful also to defend the head and eyes from injury after the fall, and during the operation.

In the plate annexed, the legs of the horse are seen approaching each other out of the perpendicular, and drawn towards the centre of the body, by which the power of resistance is greatly diminished, and into which position they may mostly be brought before the men begin to pull the rope, or the horse is aware of being hampered or disposed to make any resistance; and if only one or two of the legs are so situated, it will have its effect in facilitating the fall without his moving from the place on which he stands: but, with some very shy horses, it is best not to make any attempt of this sort; with heavy horses or draft horses, &c. it is more particularly of advantage. But when it is practicable, it is most advantageous to get the two legs of the off or opposite side to the men pulling at the rope into this situation, being the side on which he is to fall; as he then more certainly falls to that side. Some horses spring from the ground, when they find themselves entangled, in which case their fall becomes more uncertain; if, by chance, they fall towards the rope, they must be turned over on their backs after the hobbles have been made fast by the hook.

The horse's tail, as having great command of him under the circumstances of his being poized and about to fall, has been usually my post of duty in this process, and frequently, in the moment of balancing, the opportunity is afforded of deciding the fall on the side we wish; a steady confidential man also should be placed at the head, and another of this description should manage the rope next the hobbles, taking a short hold almost close to the apparatus, pushing with the other hand against the shoulder or side of the horse, and renewing

his hold as the rope passes; this, however, requires some address, as the horse may, if it is resorted to too soon, lean towards it, which they are apt to do when any thing is pressing against them, and so fall on the near side, that it should be desisted from if this is likely to take place, but may much assist if duly used.

In the moment of pulling the rope stationed at the tail, I take the opportunity with my foot of touching pretty sharply the hind leg on the off side, or side from the casting rope, and, as he lifts up, it is drawn inward towards the centre of the body, and greatly assists in the operation, determining also in general his fall to that side.

One hint more I might also subjoin, in respect to handling the horse, for it is very common to see the shoeing smiths about any operation of this sort of a painful kind, approach the horse with a timidity of suspicion, and touch his legs and other parts with their fingers' ends, thereby creating an unnecessary alarm and irritation: he should, on these occasions be approached with confidence, and the flat hand be used with the greatest freedom.

There is a small part or addition to this apparatus, which I have not yet described, which is a loose hobble, or noose, for taking out a leg, if necessary, or to tie it in any position to the other legs, that may be required for the conveniently performing an operation, or, in case of accident, it may be used to secure him: if made of a rope with a flat webbing at the end, and an iron ring to pass the rope through, it answers very well, for such we have used; and, it may be almost superfluous to say that two or three trusses of straw should be scattered on the ground to throw him upon.

In this way, the most painful operations may be performed upon this powerful animal with perfect safety; and I rejoice the more at the success of these means, as I well remember, in the commencement of my studies in this art, that casting the horse was attended with so much trouble and difficulty

from being badly performed, that instead of it, severe twitches were had recourse to, during an operation, applied to the nose as well as ears; and he was often cruelly beaten with whips and sticks, to make him stand up during the performance of firing or other operations, to make him stand quiet, and was often in this manner most shamefully abused, which now there can be no just cause for resorting to.

As it is by practical improvements, the veterinary art must be advanced in utility and estimation with the public; so I shall feel happy, if this little invention may be considered in a small degree contributing thereunto.

THE

VETERINARY PHARMACOPŒIA,

OR,

INSTRUCTIONS

FOR

Compounding Horse Medicines,

AND

PREPARING THE VARIOUS SUBSTANCES

EMPLOYED IN VETERINARY PRACTICE,

AT THE DIFFERENT

Veterinary Colleges of Europe and British India:

WITH

A LARGE COLLECTION OF VALUABLE

RECEIPTS,

OF

ESTABLISHED EFFICACY;

Tried on Condemned Animals at those Institutions.

BY DR. J. CARVER, P.A.M.

PREFACE.

It is but within these last thirty years, that the Veterinary art has assumed the form of a science, and thereby acquired a distinct appellation on a solid foundation. Receipts handed down by traditionary skill, in which ingredients were accumulated without judgment or discrimination, constituted the principles and practice of what was termed Farriery; a name which it derived from the occupation of those persons who practised it, and who, in general, were smiths or workers in iron (Ferracius).

To attempt to distinguish the causes of the Horses' diseases, was far beyond their little skill; and, in general, random trials of a few burning medicines formed their boasted practice.

The science, however, at one time, began to rise above the order of smiths, and attracted the notice of medical practitioners; but it was not thereby greatly improved, as those physicians of a day were not aware of the difference, *which has since been found* to exist, between the structure and economy of the horse, and that of the human subject; nor had they any idea, that this dissimilarity required much consideration with respect to diseases, and the effect of medicine on the quadrupeds; and one thing which never would have escaped their notice, was the horizontal position of the horse, as contrasted with the upright form of man. This publication will, however, enable every person to form a proper judgment betwixt the constitution of a horse, and that of man; also, the different effects of the same medicines in both. Thus, *Arsenic* has been given to a horse to the quantity of some drachms,

while one eighth of a grain is the proper dose for the human subject. *Tartar Emetic*, also, a medicine equally active, is now, in some cases, administered to the amount of even some ounces daily; for the human subject, a single grain is a dose, and often too large a one. *Blue Vitriol*, has also been given in the same manner, to the amount of some drachms a day; *Verdigris* also, to the same extent; as *Henbane*, *Hemlock*, *&c. &c. &c.* Corrosive Sublimate, also, has been given under my own inspection, when in charge of the Hospital stables at the Royal Veterinary College, to *condemned horses*, without producing any possible effect. On this subject I might enlarge; but I hope sufficient has been said, to show what is due to the improvement in this department of anatomy and physiology, as well as medicine; and to none am I more indebted, than to my worthy instructors: professor Coleman, William Sewell, esq. assistant professor, and Bracy Clark, and others of the medical profession; for their correct anatomical views of various parts of the animal; for their tracing the cause of many diseases, as well as the difference of structure in both, to their source, on which the most erroneous ideas have been entertained; and for explaining their opinions on a proper analogy, between the maladies of animals and man; thus rendering their explanation easier, and better understood.

It is only since the establishment of Veterinary institutions in all parts of the world, except America, that the anatomy and physiology of the horse, and other quadrupeds, have been properly investigated; and the effect of medicines on their bodies correctly ascertained, by numerous and appropriate experiments on condemned animals, both in health and disease, so that a secure foundation is now laid; and I hope, the time is not far distant, when we shall derive the same satisfaction in seeing the same progress of improvement in this country.

And, though many books have been copied in this country, from books of Farriery, concerning the diseases of horses and cattle, those people who put them forth knew not, that the

Veterinary Art had assumed the form of a science, and that they were only catch-penny cow doctor books, that could contain very little or no scientific information concerning the diseases of quadrupeds; but more particularly, the therapeutical parts, which relates to those medicines proper for their diseases. Such a work as this, therefore, appeared to me, a desideratum in the Veterinary Art; and has induced me to add to it, the College Pharmacopœia. This will comprehend the materia medica, comprising directions for forming and compounding the various compositions, in the most convenient and efficacious manner; together with many valuable receipts and discoveries, by the Brahmins and Veterinary physicians of the college of Bencras, in India; the whole forming a complete system of *Therapeutics, instructing the inexperienced* how to distinguish the purest and most genuine drugs, and to compound them in such a way as will enable him to *combat*, with success, the various diseases to which horses are liable.

Having commenced this useful task with the sole desire of making myself useful, by the instruction I shall convey in these productions, I feel it also a duty incumbent on me, to extend my labours by lectures; and to present a descriptive catalogue of such medicines only, as my own experience enables me with practical confidence to recommend to the practitioner's notice—it being my firm intention, in these publications, to teach the practice of the art on principles, and not receipts only; nevertheless, they will be a safer guide to those not medically educated.

In doing this, I cannot do better than to give, and recommend the same advice as imparted by one of our first and most experienced professors in Europe; and, in fact, to convey every species of information that may be useful to the junior practitioner. In the Pharmacopœia which is intended to be added to this work, instructions will be given for compounding and mixing medicines in such a way, that they may

mutually assist each other in their curative operation, and sometimes produce effects that cannot be obtained from either of them individually; for many persons undertake to compound veterinary medicine who are unacquainted with chemistry, and not aware that, by improper mixtures, the original qualities of the ingredients may be destroyed; thus, by mixing many of the acids with simple soda, (many of which are powerful caustics,) an innocent salt only is obtained; and many, very many, are the mistakes of this kind, to be found in almost every book of Farriery which we find written by those, who, *not emerging* from a school of proper instruction, cannot of course be relied on; for how frequently do we find them recommend, and direct heterogenous mixtures, uniting medicines of opposite qualities in the same ball or drench.

In this appendix, I have, however, endeavoured to avoid those errors; and no medicine will be recommended in this Pharmacopœia, but such as have undergone the test of experiment, either in the London or other Veterinary Colleges of Europe and British India.

J. CARVER,
Professor of Animal Medicine.

VETERINARY PHARMACOPŒIA.

ABSORBENTS.

The efficacy of this class of remedies is supposed to consist in their tendency to correct diseased acidity in the stomach. Horses are sometimes disposed to eat their litter in preference to hay; and not unfrequently, they have a propensity, (but more particularly in the hot climates of India,) to swallow earth or any kind of rubbish. The horses of that country being more prone to this act than those of other climates, I account for, by the earth of that country being always more or less impregnated with salt: it is also supposed to arise from the irritation of an acid in the stomach; but as this organ in the horse has but a small portion of secreting surface, so is he less liable to affections of this nature than any other animal.

In horned cattle, complaints, apparently originating from this source, are more common. Horses, cows, calves, and sheep, are sometimes benefited by chalk; which, mixed with chaff, or cut hay, is found very useful, when acidity of the stomach arises from debility of that organ. It is, therefore, recommended as the best anti-acid hitherto discovered in veterinary practice.

No. I.

Prepared chalk . . .	3 drachms
Catechu	3 drachms
Aromatic powder . . .	2 drachms.

No. II.

Pulverized ginger . .	2½ drachms
Catechu and quassia, each .	2 drachms
Prepared kali . . .	3 or 4 scruples

Oil of carraway, oil of peppermint, oil of chamomile, oil of thyme, or any of the essential oils, 12 or 15 drops.

No. III.

Catechu, columba root, soda, or prepared natron and cassia, well pulverized, each 2 drachms.—*Mix.*

Note.—These medicines are to be made into balls, with a little linseed, carraway seed, or any kind of flour, with syrup, honey, or molasses.—One to be given every morning.

ACIDS,

In chemical language, are a class of salts; but among practitioners, they familiarly express whatever produces the sense of sour to the taste. They are obtained from the three kingdoms, the *mineral*, the *animal*, and *vegetable;* and such as are in use in veterinary practice, are described under proper names in the materia medica.

ALOES,

Is the inspissated juice of certain plants, and is a very important article in the list of Veterinary medicine. Aloes form the most effectual purge for the horse we are now acquainted with; too much care, therefore, cannot be taken, to procure them genuine. The different sorts of aloes are distinguished by their names, and the plants from which they are procured.

Every practitioner, however, should purchase them by the quantity, and have them powdered under his own eye, as being the surest way to prevent adulteration.

Aloes are of several sorts, though the three most in use are, the *Barbadoes*, the *Socotrine*, and the *Cape*. The *Socotrine* was formerly the most used, though I have often been disappointed in their effects; having, however, given a fair trial to those above, I have uniformly found the Barbadoes the best, and the most sure, certain, and active in their operation. They are,

for various reasons too lengthy for insertion in this place, to be preferred. Suffice it, therefore, to say, that they are less brittle, less fragrant, and less bitter, I think, than the others, though some druggists say they are more intensely bitter: these cannot be well adulterated without detection, they being of a darker colour than any of the others. It should, however, be understood, that if given too largely, and the horse treated improperly, they must prove fatal; as for instance, when you have given the strictest orders (in winter) to give the horse moderately warm water, and have gone and found the servant leading the poor animal to the pump, surrounded several feet thick with ice;—and all this *with the severest imprecations* against the doctor, because he directs John, Tom, Dick, or Harry, to take the trouble to warm a tea kettle of water over his master's kitchen fire. This neglect often dooms many a poor animal to his long home; for by the administration of cold water, during the action of the physic in the intestines, it is prevented from passing through in the proper given time; and the consequences are sometimes serious, and often fatal.—"The doctor has killed my master's horse," says the groom; "but it was because I did not obey the doctor's instructions."

Aloes is very often given, or administered, under various forms, and in various ways besides that of physic. As an alterative, as a stomachic, as a vermifuge, as a cataplasm, and as an external detergent and stimulant application; it is also used as a tincture, &c. As a cataplasm, it is very much used among the natives of the east; in this form, and as a plaster, as well as a poultice, I have been eye witness to its powerful effect on the elephant, the camel, the horse, and other quadrupeds—which shall be enumerated under their proper heads alphabetically. In winter time, they do not powder readily, and if laid by even in the powdered form they will unite into a solid mass again; they should, therefore, be mixed and formed into balls, with half their weight of any

kind of oil; in this manner, they will keep of a uniform small and proper consistence, and never harden; and, of course, readily dissolve in the stomach without griping. If, however, an occasion should happen when they are in your possession in the solid form, you may readily dissolve them in lard or molasses, over a gentle heat; in this way, the ball may become too large to be taken at once, in which case they must be given at different times. A tincture or watery solution should always be kept by every person in the habit of using them frequently, in large establishments; in this form aloes is very useful, on account of its quicker action. I generally make it in the same way as prepared at the different colleges, by pulverizing a pound of the mass, and infusing it in a warm place (in the summer, in the sun—in the winter, by the fireside) in a pint or a pint and a half of best proof spirits, for three, four, or even five days; after which you may add soft water that has been boiled, about two quarts, and then bottle for use; when necessary to be given, shake your bottle, and give two, three, four, or even five ounces, as circumstances may require. It should be remembered that the large doses are only required in cases where the peristaltic motion of the intestines are supposed to be lost: as in Tetanus, or Lock Jaw, Staggers, &c.

No. I.—*Very mild.*

Barbadoes aloes . . .	6 drachms
Pul. cinnamon	1 drachm
Ol. aniseed	20 drops

Peppermint water sufficient for a ball.

No. II.—*Mild.*

Socotrine aloes . . .	1 ounce
Ginger	½ drachm
Ol. thyme	40 drops

Peppermint water sufficient for a ball.

No. III.—*Strong.*

Barbadoes aloes . .	8 drachms
Ginger	2 drachms
Volatile oil	40 drops

Peppermint water sufficient for a ball.

No. IV.—*For carriage or cart Horse.*

Barbadoes aloes . . .	8 drachms
Calomel	2 drachms

Peppermint water and linseed, sufficient for a ball.

Note.—It should be observed, that when physic is given to horses at grass, one-fourth of the aloes should be subtracted.

ALTERATIVES,

Are medicines that act both gradually and medicinally on the constitution, in a slow and almost imperceptible manner. The usual Alteratives used among Farriers, are, *Antimony*, Nitre, Sulphur, *Spices* and *Resin*, which are by them usually given together; but a better acquaintance with the art has taught us better, and we now sometimes add several of the Gums—*Fox Glove*, *Arsenic*, *Mercury*, and some of the *wood barks*, *&c.* A change in diet will also, sometimes, act as a powerful alterative. Nitre, in drops, from two to six drachms, increases the urinary discharge, and keeps down the accumulation of fluids in swelled heels, and other œdematous enlargements. *Antimony*, is given in several forms, from half a drachm to six, for affections of the skin, hide-bound, &c. Antimony, is an excellent alterative, in doses of one or two drachms. *Antimonial Powder*, and *Tartar Emetic*, are both prepared of antimony, which is certainly one of the best medicines we have in use. *Cream of Tartar*, is also an excellent

alterative, when combined with mercurials and sulphur, for surfeits, &c. &c. *Resin*, is an active diuretic, and should be classed among the *Diuretic Alteratives*, such as Nitre, Soap, Turpentine, &c. These diuretic alteratives are used as a preventive when a horse is subject to swelled legs.

THE DIAPHORETIC ALTERATIVES,

Are considered, when applied in affections of the skin, as intended to increase insensible perspiration; they also give a gloss to the coat. The complaints in which this class of alteratives are used, are such as surfeit, hidebound, and insensible perspiration; they are also given to remove an undue determination of blood to any internal organ, or to diminish general plethora. They, however, seldom prove effectual, unless assisted by good grooms, exercise, &c.

TONIC ALTERATIVES,

Such as Arsenic, is considered as one of the most powerful kind in the horse; it must nevertheless be used with caution, and should not be administered but by the hand of a veterinarian, who alone can know how to correct its effects, if improperly given in too large a dose, or on an empty stomach. *Tonic Alteratives*, are also composed of *Copper*, *Zinc*, *Iron*; there are also Vegetable Tonics, such as the different barks, gentian, quassia, snake root, and other bitter roots; all of which will be noticed in their proper places. The alteratives of farriers in general, are not composed with any distinction; laxatives, diuretics, &c. being all mixed without discrimination. They generally mix sulphur, nitre, resin, antimony, and sometimes turpentine, with an intention to remove diseases supposed to arise from obstruction; this mechanical mode, however, of removing obstructions, is now totally disregarded, as incompatible with our present knowledge of physiology.

THE MERCURIAL ALTERATIVES,

Are composed of calomel, and corrosive sublimate; they are useful in all herpetic affections; and as a vermifuge, in doses of a scruple to a drachm, and a drachm and an half, does wonders. They should not, however, be continued beyond the third dose, or salivation may be produced. In cases of Farcy, Glanders, and Grease, corrosive sublimate may, in doses of ten and twelve grains to a scruple, be given with the same precaution, as it may produce inflammation of the stomach. It should also here be noticed, that arsenic is not given with the same intention as the last articles, but as a tonic in *protracted debility;* it is, in small doses of one, two, and three scruples, very useful; and in all watery accumulations, fox glove is a powerful alterative, given in the same quantities.

LAXATIVE ALTERATIVES,

Are very often substituted for purgatives, with great advantage. For horses that are troubled with worms, when too weak to take the stronger purgative which is employed to destroy worms, calomel, in small doses of one, two, or three scruples, I have found very serviceable. I have also given only common salt, to the extent of two, three, and five ounces, which sometimes, in a few days, opens the bowels, and proves very serviceable; but people living near the sea shore, should give the sea water in preference. In obstinate cases of Grease, and in Chronic Inflammation of the Eyes, sea water is also serviceable. But the strongest laxative alterative is aloes, given in a drachm, a drachm and an half, or two drachms, with an equal quantity of soap; and sometimes we add ten, fifteen, or twenty grains of calomel.

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A Laxative Alterative.

Barbadoes aloes	10 drachms
Castile soap	1 ounce
Ol. cloves	20 drops

Aniseed powder and syrup sufficient to make four balls, to be given every night.

A Diuretic Alterative.

Nitre	½ an ounce
Sulphur and antimony, each .	½ an ounce.

Linseed sufficient to make the ball with any kind of syrup.

Diaphoretic Alterative.

Emetic tartar	3 drachms
Sulphur	3 drachms
Nitre	½ an ounce

Linseed and honey sufficient to make two balls, one to be given, for a week, every night in feed.

OF THE ACIDS.

In veterinary medicine they come under a variety of heads, and are all used in their turn; as the *Sulphuric, or oil of Vitriol*, the *Muriatic*, the *Tartareous*, the *Nitrous*, and the *Acetous Acids*.

ÆGYPTIACUMS,

Are of various kinds, and when properly mixed, and properly applied, are, in all foot cases, worthy of more attention than perhaps one half the compositions in the materia medica. They are generally mixtures of *Verdigris*, *Honey*, *Vinegar*, *Alum*, *White Vitriol*, and *Borax*. This invaluable medicine is also used in Grease, Cracks, Thrushes, and particularly Canker of the feet, Ulcers, &c.

Ægyptiacum Ointments.

Take of pulverized Verdigris, in powder, 6 ounces; Honey, 20; Vinegar, about 7, 8, or 9 ounces; which must be boiled over a gentle fire to the consistence of an ointment.

OR,

Take of Honey, 1, 2, or 3lbs.; Blue Vitriol, Verdigris, and burnt Alum, in powder, each 1½ ounce; boil them over a gentle fire, till they have acquired a proper consistence, and a reddish colour.

Another preparation of Ægyptiacum, well adapted for Running Thrushes and Canker feet.

Take of burnt Alum, blue Vitriol, and Verdigris, each 2 ounces; Corrosive Sublimate, 1 drachm, in powder; Vinegar, about 6 ounces; Honey, about a pound or pound and a half; sufficient to make it of a proper consistence, when boiled over a gentle fire.

ÆTHIOPS MINERAL.

(Sulphuretum hydrargyri ingrum.)

This medicine, on account of its very high price, is but very little used in horse practice. Its proper virtues, also, I believe, are not sufficiently known; it was formerly much used among the ancients, and the moderns have again brought it into use, although very expensive. In Surfeits, and foulness of the skin, it has performed wonders, and may with safety be used to the extent of five or six drachms, mixed with ten or twelve of cream of tartar, daily. It is now considered as one of our best alteratives.

ETHER,

Has also proved itself a very valuable medicine; but is too expensive to be brought into general use as a veterinary medicine.

Nitrous Ether, or the sweet spirits of nitre, is a good and valuable medicine, and will no doubt come into more general use as it becomes better known. A drachm of Sulphuric Ether, mixed with eight or ten of water, is now found to be an excellent wash or salve in the last stages of ophthalmia.

ALUM,

(Alumen.)

Is a saline compound body, composed of sulphuric, vitriolic, alumine or pure clay. It is used in diarrhœa and diabetes as an internal astringent. Externally it is used in many forms. I have used it with great success on ulcers to destroy fungus, commonly by old women called proud flesh, and it may not be inapplicable in this place to state, that what they sometimes term proud flesh, is the healthy granulations of a wound, which they keep discharging, under the supposed but improper idea of its being proud flesh; consequently they do much mischief by keeping open for weeks a healthy wound, which might, if let alone, be healed in a few days.

It is an excellent styptic to stop bleeding, and if sprinkled on the surface of the orifice will constringe and plug up the mouth of the bleeding vessel: it is also a useful astringent in inflammations of the eye, and the whey of this drug makes an excellent eye-wash, and for horned cattle in fluxes of all kinds, is one of the best drinks I know of. Vinegar and molasses, mixed with water, as a common drink in those cases attended with fever, I have also found of great advantage. It also makes a good astringent clyster, both for the horse and horned cattle, but particularly for calves.

Note.—Alum for external purposes is also a very useful remedy for Grease, when finely pulverized and sprinkled on the diseased parts. *Burnt alum* is made by putting any quantity of the crude alum in a pot or iron ladle, and keeping it over a gentle fire until all the watery particles are absorbed or evaporated. It may then be easily converted into a pulverized substance. But if exposed to too strong a heat, it becomes decomposed, and of course useless.

AMMONIA.

(Ammonia carbonas.)

Ammonia is now made and used under various forms, but according to the modern term is now called volatile alkali, and is principally composed of bones, or sal ammoniac. It is said to be an excellent stimulant in fevers; it is also an excellent ingredient in all liniments, and when mixed with oil and camphor, which has been dissolved in spirits of turpentine, joined with the white of one egg, forms an excellent application for swellings, strains and bruises.

The prepared Ammonia, given in the latter stages of fever, in drops of one or two drachms, under approaching debility, will be found a serviceable medicine, and if mixed with the compound spirits of ammonia, and the fetid spirit wherein asafœtida has been mixed, its qualities will be greatly improved. Its virtues, given in this form, has proved it to be an excellent antispasmodic in nervous complaints. In veterinary practice it has not until lately been much used with us, though among the Persians and veterinarians of the East, the fetid spirit of ammonia has been long used and known, and when squills are added to the fetid spirit, it will be found an excellent remedy in cough and catarrh.

THE SPIRITS AND SALTS OF HARTSHORN,

Are nearly the same as the prepared, but being distilled from the bones and horns of stags, it is highly impregnated with animal oil, which gives it that peculiar fungous smell and increases its antispasmodic qualities.

ANISE SEED,

Has been long in use among the old farriers of the day, and if they can be procured genuine, when powdered, may with great propriety be used with other warm aromatics, or as a help in mixing up balls.

ANODYNES,

In the human subject, are medicines that quiet pain and produce sleep; but as a veterinary medicine, none of our present professors are of opinion, that either opium or any other medicine yet discovered is capable of producing this effect on the horse. The stomach of the horse being but small, and being also divided into two portions, and having but little secreting surface, acts, like anodynes, by a sympathetic effect; so in him this class is not numerous, and opium, which is the grand anodyne of the human subject, is also the sheet anchor of the veterinarian; yet we have found in veterinary practice that camphor and ether will, when properly applied, mitigate pain. Opium, when administered to the horse, is generally given in doses of from 1 to 3 drachms; but when the pain is produced from inflammation it should not be employed.

In symptoms of inflamed intestines, or inflamed bowels, opium would do much injury, but in flatulent spasmodic colic, commonly called gripes, it seldom fails of giving relief.

Some veterinarians belonging to some of the colleges on the continent, have, I believe, attempted to prove that this invaluable antispasmodic is nearly inert in its effects on the horse; but it should at the same time be taken into consideration, that no theory can possibly overturn facts, which have, and must on further trial incontrovertibly prove of public benefit. Opium has, on a fair trial, proved itself to have the most salutary and active effect on the horse; in spasmodic diseases its effect and benefits have been particularly observable, in the doses here prescribed; in clysters also its beneficial effects have been particularly observed; it has also been very beneficially employed in assisting the action of astringents, in diarrhœa and profuse staling, and when united with alum and catechu, it is singularly efficacious. When given in doses of one and two drachms every six or eight hours, it in-

creases the pulse, and proves a useful auxiliary in debilitated stages of fever.

Anodynes.—No. I.

Opium	1½ drachm
Best brandy	½ pint
Camphor and soot . . .	2 drachms

No. II.

Opium and camphor, each .	2 drachms
Brandy	½ pint
Peppermint	4 ounces

No. III.

Liquid laudanum . .	4 ounces
Brandy	1½ pint
Camphor (mixed in a qt of gruel)	4 drachms

NOTE.—To either of these 4 or 5 ounces of *Ether* may be added; but when this last ingredient forms a part, it must be given with great expedition.

ANTISPASMODICS.

The antispasmodic and the anodyne being nearly the same may as well be classed together. Though the horse is not so subject to spasmodic disease as the human subject, yet as opium, camphor and ether, are the chief ingredients, we will insert them in this place.

No. I.—*Antispasmodic mixture for Locked Jaw.*

Take Opium and camphor, each 2 drachms, Ginger 4 drachms, mixed with syrup for a ball, or with some stimulating fluid, as brandy, about 8 ounces, and given as a drench.

No. II.

Take compound tincture of Cardamoms from 3 to 5 ounces, Peppermint 3 ounces. Then add 1 ounce of Ether.

Lock Jaw is a disease that generally proves fatal to horses; but when the jaws are not firmly set, it may be worth while to try the above medicines. I have known several cases in this city, in which brandy and opium, and brandy and laudanum succeeded. It is however necessary to repeat it, and that in very large and powerful doses (a pint of laudanum to a quart of the best proof spirits, mixed with about a quart of gruel, and given in two drinks) firing, and a very strong blister run over the jaws and all down the spine to the anus, in cases requiring it. This treatment I have seen attended with good effects, and the horse finally saved. The lines of fire should be run across the vertebræ of the neck; one line down and upon the back bone; and two or three lines about two inches apart on each side of it.

The blister for this purpose should be made as strong as the ingredients can make it, and well rubbed in.

No. I.—*Antispasmodic mixture for Flatulent Colic.*

Oil of turpentine 4 ounces; Gruel a pint; add Camphor one drachm and half: and mix for one dose.

No. II.

Camphor . . .	1½ drachm
Ether	3 drachms
Peppermint . .	2 drachms
Oil of turpentine . .	2 drachms

Remark.—These are formidable doses, and to an inexperienced person might give alarm. If, however, the symptoms are correct when administered, they will never do harm.

The symptoms of this disease being so nearly allied to inflammation of the bowels, intestines, bladder, &c, they are unfortunately too often mistaken, and the inexperienced practitioner oftener kills than cures. It should therefore be remembered, that this medicine must never be given but when the animal attempts to roll on his back and endeavours to keep

in that position. It should also be observed, that when the horse does this, it is a symptom of colic or gripes, in which case you may not only give these doses with the greatest confidence, but if no relief is obtained in two hours, repeat it. I have frequently given it in much larger doses. Should you, however, mistake the symptoms, and give the above when tho animal lays down and paws, and continues to paw *without rolling on his back*, you kill to a certainty. All you have to do is carefully to distinguish the flatulent or spasmodic colic from the inflammatory, and also that which arises from costiveness. Clysters and back-raking tend greatly to facilitate the cure, and prevent its return.

No gentleman who travels much with horses should go without this Instructor, and should his horse be attacked in a remote situation, where no remedy is at hand, how easily a few opium and camphor balls (which he should always carry with him) may be dissolved in a quart of good strong beer and given as a drench.

No. I.—*Antispasmodic mixture for Suppression of Urine.*

Purified nitre	1 ounce
Camphor	2 drachms

No. II.

Epsom salt	4 drachms
Juniper	1 drachm
Sapo	4 drachms

Note.—These may be mixed and made into a ball with the mucilage of Gum Arabic, or a little Linseed infusion, and given as a drench. I have uniformly used this medicine with success, though I have sometimes found a clyster a necessary assistant. Should the complaint return, give a laxative drench, and repeat either of the above medicines.

It has been the opinion of some of the Colleges that the disease called Staggers is generally occasioned by a diseased state of the stomach. This there can be no doubt of, nor that antispasmodics, judiciously applied, sometimes prove the best remedies.

I have had so much practice in this disease, that I am persuaded copious and timely bleeding is the sheet anchor on which we must depend. I shall, however, give a few receipts, which may perhaps occasionally prove serviceable.

No. I.

Ol. Peppermint . .	1 scruple
Tincture of valerian . .	1 ounce
Asafœtida . . .	5 drachms—*Mix:* 1 *dose.*

No. II.

Ether	½ ounce
Camphor	1 drachm
Fetid spirits of ammonia .	1 ounce
Ol. Peppermint . . .	15 drops—*Mix:* 1 *dose.*

No. III.

Camphor . . .	1 drachm
Salt of hartshorn . .	2 drachms
Asafœtida . . .	4 drachms
Ol. Thyme . . .	15 drops—*Mix:* 1 *dose.*

Note.—In Staggers the peristaltic motion of the bowels is rather torpid, and we sometimes cannot get even the strongest cathartics to operate. I would therefore recommend the following purgative:

Barbadoes aloes . . .	8 drachms
Calomel	½ drachm
Soap, Q. S. for ball	

No. I.—*Antispasmodic mixture for Cough.*

Powdered squills . . .	1 drachm
Camphor	1 drachm
Opium	1½ drachm

To be made into a ball with honey, molasses or soap, for one dose.

No. II.

Squills	1½ drachm
Opium	2 drachms
Balsam of Tolu . . .	1½ drachm
Asafœtida	1 ounce
Balsam of sulphur Q. S. for one dose.	

NOTE.—These balls should be given every night or morning, until you observe the animal gets relief. I have in my practice found them very efficacious, and oftener better than the laxative alterative. Coughs which arise from inflammation or irritation of the throat, constantly harass the animal, and may easily be distinguished; in which case, emollient drinks of linseed and honey may be given as often as the animal feels disposed to take them. This is also an excellent drink for cows and oxen, under the circumstances I have just noticed, though I cannot tell why (unless it is on account of the acid) that horned cattle always prefer the molasses to the honey.

ARSENIC.

(Arsenici oxydum.)

This very powerful medicament has but very lately been properly estimated. The modern veterinarian has at last found it one of the most powerful and excellent tonics, and in doses from ten to thirty grains a day, finely powdered, gives a powerful tone to the stomach of the horse. It however in some cases remains in the constitution, and produces its noxious effects suddenly and irresistibly; it is, therefore, prudent to exhibit it with great caution, and should never, as before observed, be given but by the hand of a veterinarian.

ANTHELMINTICS.

Of the anthelmintic medicines a great variety of the vegetable class have been supposed to possess the quality of expelling worms; but I have not found any of them effectual.

Of all the preparations, I have never yet found any so effectual as calomel, and when 15 or 20 grains of arsenic are mixed with half a drachm of calomel, and given night and morning, I have never known them fail. Of the mineral kingdom, pewter, tin, and iron, are sometimes used. Tin is an efficacious anthelmintic for dogs.

ASAFŒTIDA,

Is by some veterinarians considered as a minor antispas-

modic; but having witnessed its good effects in giving it to the horse by the farriers of Asia, I think it worthy of a place in this pharmacopœia.

It is a gummy resinous substance, possessing a most powerful unpleasant smell. Among the Persians and natives of India, it is used as common in their cooking as garlic among the Spaniards, and as a human medicine among them is considered a good antispasmodic. Its use as a veterinary medicine is in the form of the fetid spirits of ammonia, and the dose is from one to five ounces. I have found it serviceable in coughs, and when employed as an expectorant squill is a useful addition.

ASTRINGENTS.

The principal of the astringent medicines are the Gallic acid and Tannin; but those that are generally used for astringents, and those that act by constringing the divided ends of blood vessels, are called styptics; such as *chalk*, *alum*, *starch*, *opium*, and *catechu*, which act favourably in restraining internal fluxes, as diarrhœas, scouring, &c. Some chemists are, however, divided in their opinion respecting the acid and tannin, and some medical writers class the preparations of zinc, lead, iron, copper, &c. as tonics for debility.

No. I.—*Astringents for Diarrhœa.*

Prepared chalk	4 drachms
Ginger	2 drachms
Catechu	½ drachm
Opium	1 drachm

Mix into a ball with honey.

No. II.

Castile soap	1 drachm
Aromatic powder . . .	2 drachms
Alum	1 drachm

Gum or honey for a ball,

No. III.

Ol. Mint	30 drops
Chalk	5 drachms
Catechu	1½ drachm
Gum and honey Q. S. for a ball	

Note.—In cases of diarrhœa, when violent, I have found it good practice not to stop it too hastily; but to give first a gentle laxative before the astringent is administered.

No. I.—*Astringents for Diabetes.*

Powdered ginger and oak bark, each .	2 drachms
Opium	1 drachm

Which may be given in a pint of astringent decoction.

No. II.

Alum	1 ounce
Armenian bole	1 ounce
White vitriol	2 ounces

Rhubarb and honey, Q. S. for ball.

ANTIMONY,

(Antimonii Sulphuretum.)

In veterinary medicine, is administered under various forms. It has long been used as an alterative, in doses from 5 to 10 drachms, and antimonial powder, or antimonium (*oxydum*) is a preparation from the crude, and simpler in its qualities than Dr. James's powder, which affords the practitioner an excellent febrifuge, in doses from a scruple to two drachms. Emetic Tartar (*Antimonium Tartarizatum*) is another and still more valuable medicine in horse practice. In all inflammatory, but more particularly in pneumonic catarrhal ones, it is perhaps one of the best remedies in the world, and may be given with safety to the horse in doses of from one to two drachms; and in gentler doses, mixed with about half a drachm of digitalis (*Fox Glove*), greatly tends to lower the

action of the heart and arteries; though among farriers, the sulphuret or crude antimony levigated, is administered by them in very large doses.

NOTE.—The medicines enumerated in this pharmacopœia have undergone the test of fair experiment at the different veterinary institutions of Europe, under the inspection of some of the first veterinary medical practitioners perhaps in the world, and can therefore with safety be recommended as such.

J. CARVER,
Professor of Animal Medicine.

VENTILATION.

Air for many ages has, by every considerate man, been considered of the greatest importance to the health and well-being of all vegetable and animal creation, and of late years, but more particularly among our present philosophers and chemists, has the labours of the veterinarian not been exerted in vain. Indeed of so much importance is it now considered, that the health of horses depends upon the salubrity of this grand and living principle, that with a view of obviating the many evils attendant on the want of it, and the little attention that was until lately paid to the ventilation of stables, that government have thought it one of the most salutary measures they could possibly adopt for the preservation and well-being of their cavalry. Professor Coleman has, by his experiments at the London Veterinary College, satisfactorily proved, that that fatal disease called the Glanders, can be generated in a few hours, by confining a horse in an impure air. Is it not notorious, that it is a common practice among grooms, but particularly those who *fancy themselves profoundly skilled in the art of farriery*, to stop every crevice they can find in the stable, so that pure air is with the greatest difficulty admitted, and the noxious vapours arising from the litter, from perspiration and respiration, are in a great measure confined. Let any person only take the trouble to walk through any of the public stables of this or any other city, during the intensely hot weather, and see what those animals must necessarily suffer from being penned up in the manner they are; and though the air may not be contaminated so far as to occasion immediate disease, no one will deny that it is not sufficient to debilitate the constitution, and thereby lay the foundation of numerous and sometimes fatal complaints, as well as create all those local diseases with which we daily and hourly see so

many horses in all the livery stables suffering under; such as inflamed eyes, moon blindness, obstinate coughs, inflamed lungs, &c. injuries of the feet, &c.; all of which most certainly renders every animal more or less susceptible of cold than if he was exposed on a common; for I will maintain, that the more we follow the custom of placing a horse in a state of nature, under all circumstances of either sickness or health, the better will his health be preserved; and I will further maintain, that even in the depth of winter, a horse well clothed, and kept only in an open shed, will be less liable to contract disease, than a horse pampered in a fine stable, and often covered with heavy woollen clothing; and it is a fact that can be clearly proved, that a horse exposed even in the middle of winter on a common, is warmer, and feels more comfortable than one penned up in a fine stable in the city.

Mr. Coleman has therefore deserved well of his country, for introducing those salutary measures—the effect of ventilation. How much have I not pleaded?—how much have I not preached and argued their cause?—But all in vain. The only *satisfaction* that I have hitherto observed to result from those measures, is that of having gained myself a host of enemies, particularly among the lower order of men, who foolishly think their interests stabbed by my pointing out those things which might so easily be remedied. However, actuated by the best of motives, I still hope my reward is not very far distant, and whether those who think themselves so grievously injured by my preaching, like it or not, I feel a confidence that they must, in spite of all they can say or do, finally fall into this grand and salutary measure.

Heat, it is well known, is the grand object in nature both in the production of life and the communication of disease, according to the degree and manner in which it is applied. This being the case, the regulation and temperature of our stables in which the poor animal is to be kept, ought to be the first consideration with every owner, and of this he should be the

judge himself, and not leave it to Tom, Dick or Harry. Say, if therefore the temperature of the external air be at 32 degrees, or the freezing point, surely it is preposterous that the stable should be at 60; the one being summer heat, and the other winter cold; and the moment the poor animal is brought out from the temperature of his stable, a thousand to one but he is in the course of a few hours attacked with inflamed lungs or some other inflammatory disease, from this very sudden change: and how easily all this might, I repeat it again and again, without expense, be prevented, and the poor animal saved from falling the martyr of disease.

It is not my design in this place to enter into a regular treatise on air, and the grand necessity of ventilation in all our public and private stables; but so much have I laboured to convince people of the propriety of preventing disease in this way, and the determined obstinacy that seems to prevail on almost all occasions, that I cannot but feel it my duty in noticing this subject on every opportunity that may occur, until I bring home conviction to their minds; and if any one should doubt the facts here stated, let him only walk through one of the public stables in the morning, and feel the extreme pungency of the heat and confined air, arising from the ammonia or volatile alkali which has disengaged itself during the night, and which by that time has become unfit for respiration—consequently destructive to the principles of life; then let him say whether I am correct in my observations or not. Let me now ask, if this extreme heat, which the poor animal has been suffering all night, does not *enervate and weaken* him, and render him less capable of going through the labours of the succeeding day? and which, from the relaxed state of the skin, must keep the horse constantly bathed in a copious perspiration.

If people would only consider the matter right, a stable to be really healthy should never be more than a few degrees warmer than the external atmosphere.—But then they cry out

"O John, my horse has got a rough coat!"—Let them consider the matter well, and ask themselves this question. Is it not better that my horse should have rather a rough coat and enjoy good health, than that I should cover him with woollen clothing, have every crack and crevice of the stable stopped to shut out his very best friend, and thereby make him liable to take on disease at every change of weather that may happen? The air for this purpose should always be admitted from below, and the aperture for its admission should be of sufficient size, and made so as to open and shut according to circumstances; but it should never be closed except in very intense cold weather.

The action of bad air is particularly apt to affect the eye of the horse, and a proof of it may be drawn from the well known fact, that diseased eyes chiefly occur among horses confined in warm stables. Though costiveness may aggravate the disease, we are convinced it cannot induce it; but the action of volatile alkali, both on the nose and eyes, is so notorious, that no shadow of doubt can remain, that if excessive heat once induces inflammation, this additional circumstance will generally increase it. Independent then of any other evil than inducing affections of the eye, the atmosphere of the stable should be kept perfectly cool and free, and its temperature only a little more than the external air. On the same account, as we have before observed, the size of stables should never be large, so as to crowd too many horses together. By this the air of the stable becomes vitiated, and contagion and disease might follow as the consequences.

VETERINARY BATH.

TO

Private Gentlemen, Owners of Breweries, Proprietors of Mail Stage Establishments, and Livery Stable Keepers,

THE FOLLOWING

Improvement in Veterinary Science,

IS RESPECTFULLY SUBMITTED.

THE various uses to which Dr. Carver's *Patent Universal Veterinary Medical Bath* may be applied, particularly for restoring the feet of horses that have been injured by constant use on the pavement of a large city, renders it a valuable *desideratum* to the public. The principles of this bath, and the various medical uses to which it may be applied, in diseases of the feet, such as Founder, Contraction, and Sand-cracks—of the Skin—of the Lungs—and for Inflammation generally; for Tetanus, and many other disorders both external and internal, to which horses and other quadrupeds are liable, makes it of vast importance. It is also recommended as useful in all infirmaries, and large establishments, such as breweries, sugar houses, mail stage establishments, private and public stables, &c. To the southward and westward, and in the West Indies, on large and extensive cotton farms, and plantations, where Tetanus and other spasmodic disorders so frequently occur among the ne-

groes, the hot and vapour bath will be found extensively useful in saving the life of both man and beast. Dr. Carver, with a view of making its usefulness more general, has simplified his Universal Bath, so as to render it less expensive, as well also to give less trouble and inconvenience to servants.

A model of Dr. Carver's Universal Bath may be seen at his residence, and all applications for the right of using it, together with the Patent Bar Shoe, in aid of the cure of Contraction, will be punctually attended to.

For the before mentioned establishments the following charges will be made for patent rights for the term of *fourteen years:*

For all public livery stables	$10
Mail stage establishments	10
Breweries, not exceeding ten horses	5
Private stables, do.	5
Private gentlemen, owning only one horse	3

All applications for the purchase of patent rights for a town, city or state, will be punctually attended to.

J. CARVER, *V. S.*

Philadelphia, May 15, 1818.

HEADS OF SUBJECTS

TO BE TREATED OF IN

DR. CARVER'S

PROPOSED PUBLICATIONS.

☞ *In order that the public may be put in possession of all the necessary information in Veterinary Science, Dr. C. will embrace the earliest opportunity for treating on the various subjects here detailed, selecting for his first publications those which may, at the present time, be considered of the greatest importance to this rising country.*

OF THE HORSE.

General management of the Horse; including observations on the Stable, its situation, size, cleanliness, ventilation, temperature, &c.

OF STABLE DUTY.

Arrangement of Stable Duty; bad consequences of its neglect; proper time of doing it, &c.

OF FOOD.

Proper mode of Feeding with different articles, including soft food, farinaceous grains, oats, Indian corn, &c. Consequences of hard food; showing the great advantages that would be derived from the more general introduction of soft food, such as steamed potatoes, carrots, Swedish and Russian turnips, bran, shorts, and particularly bruised corn of every description. On the impropriety of stuffing horses with so much dry hay; with observations on a more politic mode of cutting it for mixing with other food.

ON LABOUR.

Remarks and observations on Labour, and the proper mode of appropriating it among draught horses and oxen; time in the yoke; choice of carmen and drivers; with consequences of improper treatment after labour.

ON DISEASES.

Injurious custom of bleeding and physicking horses at particular seasons of the year; including an essay on the use and abuse of purgatives. Prevention of disease, reduced to the heads of Air, Dressing, Feeding, Watering and Light; with observations on the necessity of ventilation.

On Diseases of the Liver.—Jaundice.

On Diseases of the Kidneys.—Suppression of Urine.

Diabetes and Diseases of the Bladder.—Structure and economy of the Bladder—Inflammation of the Bladder; causes, symptoms, best mode of treatment, and cure; operation, how performed, to draw the water from the chest, bladder, &c.; difference of structure in the horse and man; difference of operating. Of Calculi.

Diseases of the Intestines.—Of the Colic, or Gripes—Diarrhœa, or Looseness. Sleepy and Mad Staggers.—Stomach Staggers; its causes, symptoms, and cure.

Of Glanders.—Glanders in the human subject; also in Swine. Comparison between Farcy, Glanders and the Venereal disease.

Inflammation of the Stomach.—Inflammation of the Lungs—Description of the necessary operations, and how performed in this fatal disease, made simple and easy.

Diseases of the Eye.—Of the eye, its structure, &c. Of vision, how performed. Of Ophthalmy, Cataract, or Moon Blindness, as so called by farriers. Of Gutta Serena, or Glass Eyes, &c.

OF THE PULSE.

Mode of feeling and judging of the Pulse in different diseases. Of the circulation in general. How to know when to bleed and when not, by the action of the pulse. How to judge of the blood when first drawn, and when coagulated by the action of oxygen or the external air.

ON THE ORGANS OF RESPIRATION.

Of the Trachea, or Windpipe; its structure—Roaring—Broken Wind—Strangles—Catarrh, or Cold—Chronic Cough; its treatment and cure.

OF THE EPIDEMIC DISEASE,

Which has been so prevalent for these two years past in this city, the suburbs, and on the Lancaster line.

ON SWEATING.

A cooling and salutary process in the above and other diseases. How and with what medicines this secretion is to be drawn to the surface of the body, as also by means of Dr. Carver's Patent Medical Vapour Bath.

ON INFLAMMATION, AND TREATMENT OF WOUNDS IN GENERAL.

On Inflamed Veins, and danger from bleeding; how to be treated—The Suppurative process in wounds—Punctured wounds—Wounds of the Joints; great danger attendant on; only one mode of cure, and that explained—Contused and lacerated wounds—Ulcers, Fistula, and Pole Evil; treatment and cure pointed out—Hæmorrhage, or bleeding in general—Sprains.

ON THE FOOT IN GENERAL.

The horny Hoof; its structure and use—The horny and sensible Laminæ; their elastic folds; 500 of each surrounding the horny box; their structure and arrangement—Whilst under inflammation, its treatment and cure—The Coffin Bone—Horny and sensible Sole; their uses—The Frog; its use as an elastic stop to expand the heels explained—Corns,

Contraction, Thrush, Canker, Sand-crack, Quittor, &c. &c.; their symptoms, treatment and cure, on a new principle, never before introduced in this country, by the author's Patent Veterinary Medical Bath.

ON DISEASES OF THE LEGS.

Best mode of treatment and cure, together with the necessary operations, and how performed.

ON HOBBLES.

Description of the Patent Hobbles, improved by the author, for casting horses without injury, for the performance of the necessary operations.

ON CASTRATION.

College mode of performing it on new principles, and also of operating for Curbs, Bony and Blood Spavins, Thoroughpin, Wind-galls, &c. &c. by actual cautery—together with observations on general and local bleeding.

OF HORSE BALLS, DRINKS AND CLYSTERS.

How administered, pointing out the danger of giving drink and drenches to horses—not the same effect on horned cattle.

ON OPERATIONS.

Particular directions for performing the most important operations in farriery, such as Firing, Blistering, Rowelling, Bleeding, &c. agreeably to the College mode of practice (*with a plate*).

ON DRAUGHT HORSES.

Best management of draught horses, particularly those used in drays and carts in and about the city of Philadelphia.

ON THE DISEASES

OF

COWS, SHEEP, SWINE AND DOGS;

With additional Observations on their Diseases, made during my residence at the Veterinary College.

On the Diseases of Cows.

Chapter I.—Inflammatory Fever, or general Inflammation; by the common farrier known by the various names of Quarter Ill, Quarter Evil, Joint Felon, and many others equally absurd and unmeaning.

Chap. II.—Fever, Putrid, Malignant, Epidemic, Murrain or Pest.

Chap. III.—Catarrh or Cold, Catarrh Epidemic, Influenza, Distemper, or according to Doctor Clayton, Felon.

Chap. IV.—Inflammation of the Lungs.
Chap. V.—Inflammation of the Stomach.
Chap. VI.—Inflammation of the Bowels.
Chap. VII.—Inflammation of the Liver.
Chap. VIII.—Inflammation of the Kidneys.
Chap. IX.—Inflammation of the Bladder.
Chap. X.—Inflammation of the Womb.
Chap. XI.—Inflammation of the Brain.
Chap. XII.—Fog Sickness, Hoven or Blown.
Chap. XIII.—Gripes or Flatulent Colic.
Chap. XIV.—Indigestion or Loss of the Cud.
Chap. XV.—Jaundice or Yellows.
Chap. XVI.—Diarrhœa, Looseness, Scouring and Rot.
Chap. XVII.—Red Water or Bloody Urine.
Chap. XVIII.—Dysentery or Bloody Ray.
Chap. XIX.—On the Management of Cows when near their time of Calving.
Chap. XX.—Inflammation and Swelling of the Udder.
Chap. XXI.—On Wounds, Strains and Bruises.
Chap. XXII.—On the Parturition of the Cow and Sheep.

On the Diseases of Sheep.

Chap. I.—The Rot, the Foot Rot, the Scab, Red Water, Dysentery or Braxy, Diarrhœa or Scouring.
Chap. II.—Inflammatory Fever, General Inflammation, Blood or Blood Striking.
Chap. III.—Hydrocephalus, Hurdy, Goggles, Staggers, Turnsick, &c.

On the Diseases of Dogs and Swine.

Chap. I.—Distemper, Worms, Madness or Hydrophobia, Mange Canker in the Ears, &c.
Chap. II.—Observations on the Diseases of Swine.

ERRATA.

Page 15—For *Fig.* 1. *letter B.* read *Fig.* 2. *letter b.*

In Plates.—fig. 5. letter *a* omitted on the false quarter.
fig. 6. letter *c* represents a Windgall instead of a Splint.
fig. 12. represents a Sand-crack at letter *a.*

THE

FARRIER'S MAGAZINE;

OR, THE

ARCHIVES OF VETERINARY SCIENCE.

CONTAINING—THE

Pathology of the Horse's Eye:

Explanatory of its Diseases, Causes, Symptoms, and best mode of Treatment and Cure.

ALSO,

AN ESSAY ON VENTILATION;

AND

THE PRESENT PREVAILING EPIDEMIC.

TOGETHER WITH

A History of the Royal Veterinary College of London; with an Outline of a Plan for disseminating the

SHOEING ART, ON THE COLLEGE PRINCIPLES,

THROUGHOUT THE UNITED STATES.

WITH AN APPENDIX OF THE COLLEGE FORMÆAS.

BY DR. J. CARVER,

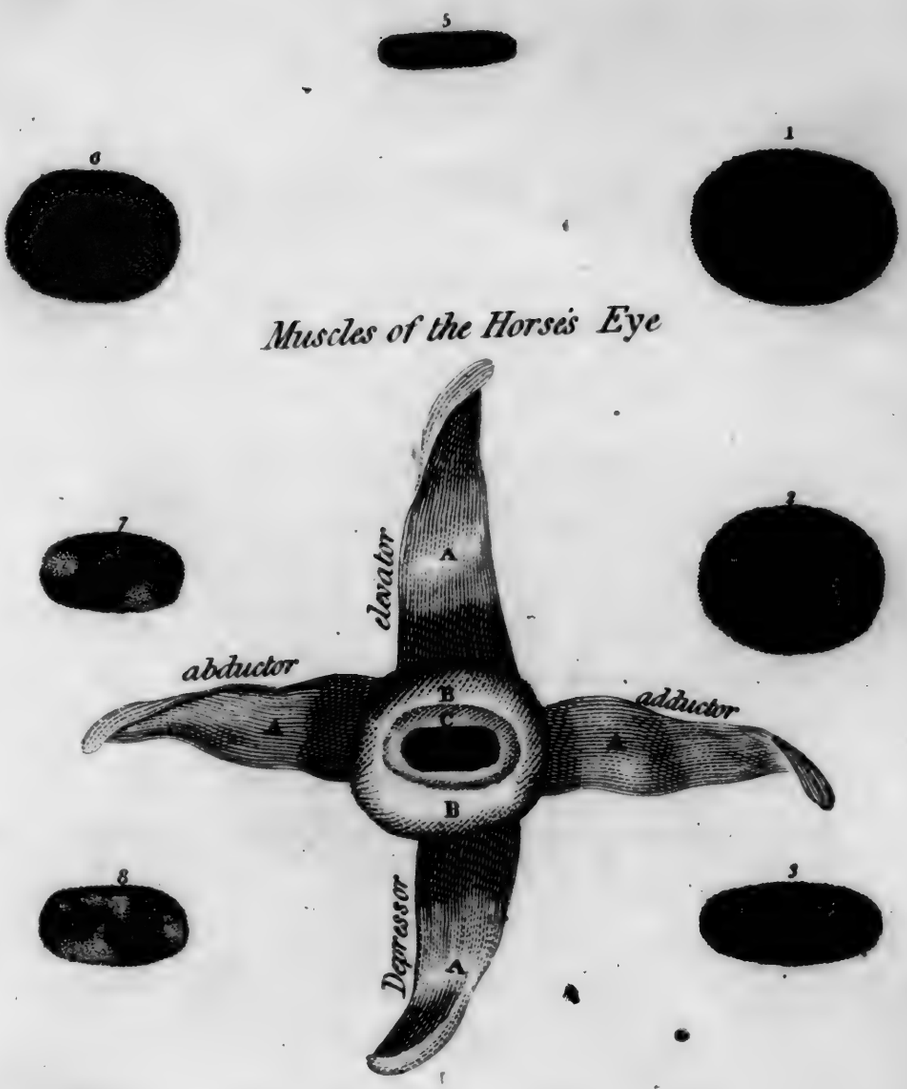
Veterinary Surgeon and Physician, and Corresponding Member of the Royal Veterinary Medical Society of London and British India.

PHILADELPHIA:

PRINTED FOR THE AUTHOR.

1818.

DIFFERENT STAGES OF CATERACT



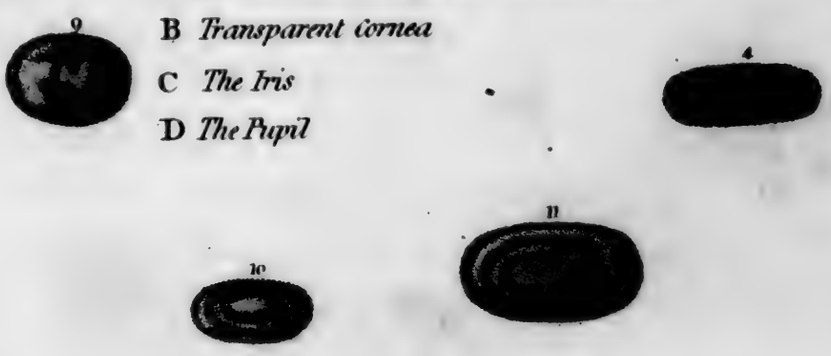
Muscles of the Horse's Eye

A *Muscles inserted into the Sercotic Coat*

B *Transparent Cornea*

C *The Iris*

D *The Pupil*



Ineas. Young & Co

INTRODUCTION.

IT is only within these last thirty years that veterinary medicine in England has been placed on the footing of a science. The institution of the Royal Veterinary College of London is the great era from which this improvement may be dated, and the consequence of this has been, that ignorance and error have been detected, so as to establish what may be termed the difference between random routine and scientific practice; and the first professor, M. St. Bell, a Frenchman, showed (as I may be doing for this country) what now might be done during the short time he possessed the appointment; but his predecessor, professor Coleman, proceeded with more enlarged views on the subject, and with a mind ardent for improvement, he set out with instituting a close analogy between the diseases of man and the horse, and has now applied this analogy very happily to the *mutual illustration* of both, which only can be known by their different formation, and a comparison of the organs in the two different subjects.

Having in the body of this essay considered the best mode of treatment for one of the most fatal diseases that renders this animal of little or no value to his own-

er, I shall in the succeeding part of this work not only endeavour to impress on the mind of my readers how to learn the chief cause of the evil attendant on inflammation of the eyes of horses, but also *learn* them how to *prevent*, instead of *undertaking the tedious task of learning how to cure them*, in order that the present publication may fully answer the purpose for which it is intended.

The animal economy in its manifold relations is generally and fundamentally the same in man and beast, and governed by the same laws of nature and natural mechanics; but the greatest skill is requisite to form a judgment on the diseases of brutes, from their inability to describe their feelings, and the consequent uncertainty of their pathology: for can there be a greater burlesque, than the supposition of a man's ability to give physic for a horse, excepting in very common cases, merely because he knows how to groom and shoe him? The plea of experience is futile; for the utter inability of illiterate and uninformed men to investigate the principles of science, and their total want of opportunity to acquire, even by rote, a rational system of practice. The whole stock of medical knowledge o these practitioners usually consists of a number of receipts, handed down from Tom and Dick to Harry, with which they continually ring their changes in all cases, *right or wrong, hit or miss;* and so fiercely are they bigoted to their own particular nostrums, they are totally incapable of all advice or improvement, the common and unavoidable fate of confirmed ignorance, since it is the highest point of knowledge to know and feel that we still need information. Let not the reader sup-

pose these to be mere flourishes; they are literal truths; and by the tenor of them he may judge of the majority of them throughout Europe, until the establishment of proper institutions with a view of drawing this useful and necessary branch of knowledge out of the hands of ignorant pretenders. Into such hands do men commit their distempered animals, who have it not in their power to reproach their masters with their accumulated sufferings. Mankind, from prejudice, indolence, and want of feeling, neglect those creatures which they can purchase with their money; and the progress of veterinary medicine, grounded, as it necessarily must be, on a proper knowledge of the anatomy, physiology, and pathology of disease, will in this country, as it was in Europe, be rapid or slow according to the diligence of those enlightened practitioners which the college has sent forth, to ascertain precisely the limits to which their knowledge extends, and in what cases it is defective.

Mr. Higgs, a very extensive practitioner of the present day in London, very justly observes, that as no labour can be done, or business carried on, in an extensive scale, but by the assistance of this useful animal, next to man he claims our first attention. In his natural state, he enjoys, with other animals, freedom from disease; but no sooner do we begin to domesticate him, do we entail disease upon him; and he is no longer the same animal as from the hand of Nature. This subject particularly interests both mercantile and commercial concerns, but which, in this country, I am sorry to add, has hitherto claimed a less share of attention than its importance deserves. My object, therefore, is to point

out the best means of preserving him in health, by preventing disease; and in fact, all those minutiæ, from want of a little attention, to which his diseases chiefly arise, and, if possible, to invite and draw every proprietor to direct, in a certain degree, the care of an animal which constitutes to man many of the most valuable blessings of life.

A horse in town, and a horse in the country are, in some measure, not the same animal; and the observations which apply to the difference, which, as Mr. Higgs observes of a town and country life with man, applies equally here; and the number of horses annually lost in all the public cities of the United States, and particularly in the mail stage departments, either from evils attendant on bad shoeing or other mismanagement, is incalculable, and calls aloud for the attention and interference of government. They are of too much value to be so wilfully neglected or injured as they are; and there is no one, perhaps, but would follow proper directions, for his own interest, if he had them to go by. In endeavouring, therefore, to obviate this defect, I trust I am performing a most useful and acceptable task to the community, by the exertions I have, and still am making towards this desirable end; and if the opportunities which I have had in different parts of the world of acquiring a little more information than generally falls to the share of every veterinary practitioner, I shall die happy in the pleasing reflection that I have devoted those talents for the benefit of my adopted country.

JAS. CARVER, V. S.

VETERINARY OBSERVATIONS.

PATHOLOGY OF THE HORSE'S EYE;

BEING A DEMONSTRATION OF ITS DISEASES, CAUSES, SYMPTOMS, AND BEST MODE OF TREATMENT.

THE organ of vision, with its phenomena, have engaged the attention of the curious in every age. As a subject of admiration, it is certainly worthy of our attention; and as a subject of importance to the well being of the animal, it is even more so, as a matter which ought to command a great portion of the research of the veterinary physician and surgeon, since it is an organ very liable to disease, and of such a nature as to have hitherto baffled most of our attempts to relieve them. It is very remarkable, that though the diseases of the human eye are estimated at more than a hundred, yet there is only *one very common* to the horse; but which in obstinacy and ill effects, more than equals all the human catalogue. This is ophthalmia membranum, or inflammation of the coats of the eye and its consequences, which by common farriers is termed moon blindness. The ophthalmia tarsi of man finds no place in the diseases of the horse.

This disease (ophthalmia) is, as I shall show, a specific and constitutional inflammation of the eye, and as such requires, probably a complete alteration of, in the constitution to its cure. And although my worthy preceptor, Mr. Coleman, has paid more attention to this subject, perhaps, than any other veterinarian in Europe, or perhaps in the world, and yet the result of his researches has unfortunately been to confirm the character of its obstinacy, and of its *fatality* to the organ it affects.

It were much to be wished that the diseases to which the eye of the horse is subject, were as much under the control of our art as some of those of the feet; but when we look at the number of blind horses, and compare them with those that are permanently lame, the difference will be manifest. It is now admitted by all veterinarians, that there is a greater disposition to disease in the horse's eye than of any other animal we domesticate; yet the horse is treated in a manner far more artificial (I should be warranted in saying more *preposterously*) than most other animals; we ought not, therefore, to wonder at meeting more frequently with instances of disease in the eye, particularly when the delicacy of the structure of that organ is considered. It is, however, of importance to discriminate between those diseases of the eyes which are produced by dust, straws, insects, blows, or any external mechanical cause, and such as are brought on by original defects in that organ, *aided* by the *slow*, gradual, and imperceptible effects of the hot and foul air of stables; because the former will be found to yield to the usual remedies that are employed for general inflammation, provided they are used with diligence and judgment. For which reason, on the first appearance of inflammation, it will be prudent to examine the inside of the eyelid with caution, and if any insect or mote be discovered, it should be carefully removed. In all cases where the lids are much swelled, it is good practice to scarify the inner membrane freely with a small lancet, and to foment them for ten or fifteen minutes with a weak infusion of camomile flowers, or warm milk and water, in order to encourage the bleeding. If the inflammation be very great, a veterinary practitioner should be called in, the pulse examined as to the necessity of bleeding, and according to circumstances, the quantity of blood to be drawn away.

Opening the angular veins under the eye I have sometimes found of great advantage, and the fomentations should be continued, and at night the inflamed organ should be covered

with a large poultice of bread and milk and a little sweet oil, to prevent it proving hard.* Puncturing the transparent cornea to let out the aqueous humour is sometimes attended with very beneficial effects. There is no danger attending this operation, as the humour secretes again in twenty-four hours. The horse at the same time should be *marshed*, and a mild dose of physic administered, if necessary. In case the stable the horse stands in should be hot and low, he should be removed to one that is lofty and airy, and if the inflamed eye affected be extremely susceptible of the stimulus of light, which may be known by the horse keeping it constantly closed, it will be of use to darken the stable, or at least to shut out the strong light of the sun. But darkness, however desirable in such cases, is certainly not worth purchasing at the expense of cool pure air. As soon as the violence of the symptoms begin to abate, and the horse opens his eye pretty freely, a little cooling eye-water may be applied two or three times a day with the corner of a soft sponge. But if the inflammation of the inner coat, called the retina, be extremely violent, which is known by the animal keeping his eye closed, the bleeding, scarification, and physic must be repeated at the end of five or six days. Blistering is always attended with general good effects, but from the corrosive materials with which they are generally compounded by those who *assume* a knowledge of veterinary medicine, they generally leave a scar for life; but if properly mixed are far preferable to seaton or rowel in the neighbourhood of the diseased organ. For whilst the practice must be allowed to be at any rate more cleanly, and free from fetor arising from rowels and seatons, I have always found it attended with effects equally beneficial, more especially as the blistering may be repeated from time to time, as soon as the scab falls off from the skin,

* A large roasted apple applied moderately warm to the inflamed eye, I have commonly found of great advantage; you may take out the core of the apple, and beat up the pulp with molasses and honey, if you please—so much the better.

without any fear of blemishing the cheek, provided only that judicious materials be used for the blister. Gentle exercise should be had recourse to for two hours every day; but if in summer always in the shade.

When the violence of the inflammation has abated, the animal should be turned to grass for two or three hours every day; but if in summer always in the shade.

When the violence of the inflammation has abated, the animal should be turned to grass for two or three hours every day; for there can be no question that the disadvantage of holding down his head to graze, will be more than counterbalanced to the animal by the good that will result from the effects of the green food upon the bowels, and more especially by the application *of the fresh cool air to the eye.*

This mode of treatment, during my stay on Long Island, I generally found effectual in all inflammations which were brought on by any external mechanical cause, and it is in fact all that can be done even when hot and foul air has produced the disease, by slow and imperceptible degrees. But, in the latter case, though the eye will look clear for a time, it will again become inflamed and dull, and the cornea loosing its natural transparency, will become opake, having sometimes a yellow, or muddy, at others, a dim and blue appearance. In the latter case, it is often supposed, *that a flim has grown over the eye*, and from grooms, smiths and jockeys, has received the name of *moon blindness*, from an absurd and foolish notion, like many other things, handed down from *William*, *Dick*, to *Harry*, that the moon had influence over such eyes,—whereas the moon has just as much to do with it, as I have with the pope of Rome. Now, as I know of no remedy for *cronic inflammation* of the eyes, called by those wise men *moon blindness*, which almost always ends in cataract, I think it almost useless to subscribe or recommend the trial of any application. But as such eyes do sometimes get so clear as to pass for sound ones, even with dealers, who pride themselves upon their judgment in those matters, it is

always best to part with the horse: for *I do positively assert*, that no man who has not properly *studied* the anatomy, pathology, and functions of *that* organ, can, or ever will be, competent to judge of its diseases; and as the mode and conditions of parting with such a horse, comes not within my province to determine, I speak as a veterinarian, not as a *casuist*.

Many writers have laid great stress upon the use of stimulating eye waters, and powders blown into the eye* in those cases, where on account of the blueness of the cornea, (or outward coat,) a flim has been *supposed* to have grown over the eye,—but as the eye will, in many instances, partially recover its transparency, without any application, and as I have seldom seen any decided or permanently good effect for any particular application, whether mild or violent, I have, I confess, no faith in the many pretended cures which are said to be effected by them. The truth seems to be, that there is some peculiarity of structure in the outer coat of the horse's eye, which, when it is attacked with cronic inflammation, precludes the successful application of the most powerful remedies. Nevertheless I have thought it necessary in the *incipient stage* of the disease to subjoin two formulæ for eye powders, which, in such cases, a little may be rubbed† into the eye two or three times a week, with as good prospect of success as any I have seen tried. Of times, however, a very considerable degree of blueness or dimness will remain in the outer coat of the eye, in consequence of inflammation that may have been brought on by blows, wounds, or external injuries; and it would be most prudent in those cases to refrain from any application to such specks or opaci-

* Grooms, smiths and jockeys will inform you, that glass *bottles, pounded fine*, is a most effectual remedy.

† As respects rubbing it into the eye, it is in the following manner: By pressing the eye lid open with one thumb, and wetting the other with the mouth, sufficient will stick to the part wetted to be rubbed into the eye.

ties, especially if they do not obstruct vision, as they will ultimately, nearly, if not wholly, be absorbed. The peculiar colour or appearance, however, of such opacities, (as *contra-distinguished*) from the opacity of moon blindness, it would be easy to describe. Commonly they are circumscribed, and they are never diffusing themselves over the whole of the outer coat of the eye. The frequency of what is called moon-blindness among horses, is indisputably, chiefly, owing to the hot and foul air of stables; but that there is an hereditary tendency to the inflammation of the eyes of some horses, which no care or prudence can guard against, no candid man, who is in possession of sufficient facts to guide his judgment, can for a moment hesitate to admit. Of late, however, it has become fashionable *to deny and decry* the existence of hereditary disease; which, to me, seems as indefensible, as it would be to deny the existence of the sun in the firmament.

The eye of the horse is provided by nature with a partial membrane, called by anatomists *membrana nictitans*, the effects of which may be seen exemplified in the day time by birds of prey, and even during strong sun-shine, by the common poultry; this is also beautifully exemplified by visiting a hen-roost at night by candle-light. Under ordinary circumstances, this membrane would seem to be but of small use to the horse, but in that fatal disease called lock jaw, its use is most beautifully exemplified, especially in the last stage of that disorder.

For if the horse be suddenly approached, in this highly irritable state of the nervous system, this membrane is instantly expanded to its full extent, (about one half of the globe) and the eye being at the same moment turned inwards, towards the nose, the pupil is thus as completely covered, and the light as effectually shut out from the retina, as if the membrane were large enough to cover the whole of the globe. Now, after a long continuance of moon blindness, this membrane becomes reddened and thickened, and the farriers who call it the (haw) or hooks, mistaking *effect for*

cause, imagine that this occasions the recurrence or continuance of the complaint, and therefore (acting rightly on wrong principles) they cut out the membrane, which nine times out of ten produces total blindness, and sometimes a few instances may be produced of the eye remaining sound after the haw has been cut off.

Further, I have no hesitation in adding, that the operation of cutting out the hooks, as it is called, is, in all cases, a barbarous ignorant custom, inasmuch that it robs the animal of a membrane which certainly was not made in vain, but placed by Providence in that part of the organ, as the curtain of the eye, to act as a defence against the superfluous rays of light, when the eye is offended by that, or some other foreign power.*

* On this subject, Professor Coleman and also Dr. Munro, in their lecture on Comparative Anatomy, make the following interesting remarks: All quadrupeds have, at the internal cauthers or corner of the eye, a firm strong membrane, with a cartilaginous edge tipped with black, and which in different animals is made to cover the eye, as they are more or less exposed to dangers in search of food.

This membrane nictitans, as it is called, is, however, not so large in all these animals. Cows and horses have it however so large, as to cover one half of the eye, and sometimes transparent enough to admit of some rays of light. Fishes have a cuticle to cover their eyes, as they are always in danger in that inconstant element in which they live. In this, therefore, we may observe a sort of gradation. But all quadrupeds have a seventh muscle, called by some the suspensorious. It surrounds almost the whole of the optic nerve, and its use is to sutsain the weight of the globe of the eye, and thereby prevent the optic nerve from being too much stretched, without obliging the four straight muscles to be in continual contraction, which would be inconvenient: at the same time this muscle may be brought at the pleasure of the animal to assist any of the other four, by causing one particular portion of it to act at a time.

We may also here remark, that the figure of the pupil, which is different in different animals, is always exactly adapted to the creative way of life, as well as to the different species of object that are viewed. Man has his circular, an ox has it oval, with the largest diameter placed transversely, to take in a larger view of his food. Cats have theirs also oval, but the largest diameter placed exactly the reverse perpendicular, which en-

In writing upon inflammation of the eyes, I should perhaps be considered, by my medical readers, as guilty of a very great omission, were I to refrain saying something upon

CATARACT,

the most common and universal result of moon blindness, especially as the *cataract* in the human subject is frequently treated successfully by surgeons. But it does not appear that the subject of this disease among horses has

ables them to exclude a stronger light altogether, or admit that only which is necessary. This is beautifully exemplified by taking a cat from a bright sunshine light into a dark cellar, and so vice versa. The pupils of different animals also varies in wideness according as the organs of vision are more or less acute. Thus cats and owls, who seek their prey in the night and dark places, have the pupils in the day time contracted into a very small compass, as a great number of rays would oppress their nice organs; whilst in the night, or where the light is faint, they open the pupil for the admission of more rays.

The posterior part of the choride coat also, which is called the tapetum, is of different colours in different animals. Horses, oxen, sheep, deer, &c. feeding mostly on grass, have this membrane of a green colour, that it may reflect on the retina all the rays of light that come from the objects of that colour, though that of the horse varies a little in this respect, having only one half green and the other half black, which is the nigrum pigmentum, which absorbs the rays of light, gives him better vision, and causes the rays of light, when very strong, to be less offensive to the optic nerve.

Cats and owls have their tapetum, of a whitish colour, and for the same reasons have their pupil very dilatable, and their organs of vision very acute, for we find that all animals see more or less distinctly in the dark, according as their tapetum approaches nearer to a black or white colour. Thus it is that dogs who have it of a grayish colour, distinguish objects in the night better than man, whose tapetum is of a dark brown colour, and who, I believe, sees worse in the dark than any other animal. The difference then of the tapetum, as indeed the fabric of any other part in different animals, always depends on some particular advantage accruing to him in its particular manner of life for this singularity.

Now the greatest part of insects have more than two eyes. The spider and scorpion have eight, some have more than a thousand eyes collected in two orbits; and anatomists tells us, that sixteen thousand eyes have been counted in a fly; in a beetle, 64,660, and in a butterfly 64,660.

been operated upon with success, although the attempt has been made by some of the first operators in London. This want of success may be explained, in part at least, by the utter impossibility of steadying the horse's eye during the operation.

For, the horse is provided with a muscle at the back of the globe, called the retractor, which does not exist in the human eye, and with which he acts powerfully when that organ is offended. And hence arises a common observation of grooms and stablemen, in cases of high and active inflammations, that the horse's eyes seem sunk in his head, which indeed is literally the case; for when the stimulus of light becomes painful to the highly inflamed retina, the animal acting instinctively with the retractor muscle, is enabled to withdraw the eye within the socket, and thus avoid a considerable portion of that pain which he would otherwise be exposed to.

The effectual application of a speculum, therefore, is in this way precluded, and the operator's fingers alone are inadequate to the desired purpose. And, after all, both Professor Peal, as well as Professor Coleman, says, that without the aid of glasses, the operation, however successfully performed, would be useless in its effects to the animal, always producing confused vision, and causing the horse to start at every object he sees.

Having now brought together most of the material facts respecting the treatment of the common diseases of the eye of the horse, what I have to add on the subject of their prevention, will be comprised in the sentiments of some of our first professors, which will no doubt convince my readers, that the far greater number of instances of disorders of the eyes are produced by the effluvia from the dung and urine of hot stables, with those that are met with among such as are kept in cool, airy, well ventilated stables, though the diet of both be equally nutritious, we shall cease to be sceptics; and though it is commonly imagined, that high feed-

ing is the chief cause of those frequent diseases, it has in fact but little or no concern in the affair. Much less has any slight change in the diet of the animal any thing to do with the complaint, though this is often supposed to be the case, even by many people who appear to possess *good sense and discernment in other particulars.* Thus it is, that one often hears disorders of the eyes attributed to new corn, beans, new hay, bad water, and even *the moon*, so prone are people to investigate the latent causes of diseases in horses, and still so desirous to account for every deviation from health. But, though I say thus much, I do not mean to deny that high feeding, by inducing a state of plethora, may predispose the organ to inflammation, especially in the cases of such horses as do not get regular work or exercise.

Still, however, I repeat, that the grand exciting cause of complaints in the eyes of horses, is, most unquestionably, to be sought for in the foul air of stables. Nor is this indisputable fact to be referred (as is commonly supposed) solely to the cause of heat in the air, (which indeed is notorious to every one,) but chiefly to the presence of volatile alkali, which abounds in the air of stables, and operates unceasingly, though *imperceptibly*, as a morbid stimulus to the outer coat of the eye. So that we can scarcely expect success in inflammations of this organ, from the most powerful remedies, so long as the animal remains exposed to the *original exciting* cause. And it may not be amiss to observe here, that the existence of so prodigious a quantity of *volatile alkali*, as the air of stables abounds with, was entirely overlooked, until the number of cases of diseased eyes in Woolwich and other barracks, became so serious, as to cause the inquiry of a serious investigation, as to the causes that produced so much blindness in the cavalry. Indeed so serious was the loss of cavalry horses, from various diseases originating from the same cause of ill ventilated stables, that government at last found it absolutely necessary to appoint Professor Coleman inspector of all the country barracks

throughout England, Ireland and Scotland; and it was not until the year I arrived at the college, that Mr. Coleman made his first tour, with a view of effecting a general ventilation through all the cavalry barracks; and so beneficial has been the result, that more than a hundred horses in every regiment are now saved from disease by this salutary measure. And on my first arrival in this city, it was my first object to prevail on the citizens of Philadelphia to adopt this measure; and so earnest has been my arguments for its general adoption, (although against my own interest to do so,) that had I been a divine, preaching from the pulpit, praying to send my congregation to heaven, I could not more earnestly have pleaded my cause for the benefit of the animal creation. But all in vain. I will therefore drop the subject with only one more hint. Supposing every gentleman who owns horses, would take the same trouble to run a stove pipe; or a tube of any kind, through the ceiling of their stable to the roof, the same as they do in their *coffee houses*, how much disease might be prevented? A few pigeon holes at the bottom of every door, and also through the wall at every convenient place, would be all that is required to drive the effluvia through the ventilator.

To the human subject, we know the danger of all animal and vegetable matter retained and pent up, must be, in a certain degree, equally detrimental to the constitution of a horse, my comparison therefore may be summed up in a few words. Let every owner bear in mind, that he has as much right to command in the stable as in his parlour, and were these points, which I have from the best of motives only glanced at, kept more in view, and strictly observed, how few horses would be lost by what are termed stable diseases.

And as a striking proof of the fact I am insisting upon, among others which might be adduced, I will mention a fact, which before my attention was called to the investigation of this subject, puzzled me to account for. The cir-

cumstance I allude to occurs to workmen who are employed to lime wash the walls and ceilings of filthy stables, where this salutary and necessary measure is rarely, if ever, resorted to. On which occasions I have observed, that they are often obliged to desist from their work frequently, and run out into the open air to escape the pungent atmosphere of the stables, which effects both the organs of sight and smell as violently as if hartshorn had been sprinkled about the place. Now the fact is, that volatile alkali, (called in the new nomenclature ammonia,) to the presence of which in hartshorn its pungency is entirely owing, is deposited in the air in large quantities, on the ceilings and walls of all stables, but especially of such as are low and ill ventilated, in consequence of the constant putrefactive fermentation of the litter; it therefore can admit of no question, that volatile alkali, even in its mild state, is highly prejudicial to the lungs and general system of the horse, and especially so to the eye, even when that organ is in a healthy state. How much then must it be to an inflamed eye, through the medium of hot air, to exasperate a disease, which is in many cases by the slow and silent operation of this pernicious stimulus.

These facts which I have brought together, will, I hope, serve to show the correctness of my arguments, as well as show the necessity of a more strict attention to the ventilation and cleanliness of stables: for there is no fact, of the truth of which I am more perfectly convinced, than the following; namely, that with the exception of the vicissitudes of heat and cold, to which horses are perpetually exposed, there is no circumstance appertaining to their general treatment, which operates so *constantly* and *uniformly* to their disadvantage, as the volatile alkali which is diffused in the atmosphere which they breathe. Indeed, if I were permitted to argue the point at full length, and with all the circumstances connected with it, it would not be difficult to prove, that it is more inimical to horses than the vicissitudes of temperature which they are constantly called upon to endure.

And, for this plain reason, that it is usual with all thinking people to take every measure of prevention, in order to guard as much as possible against the effects of such vicissitudes. I will now conclude this subject by appealing, once more, to the candour and good sense of those who have often heard me speak on this subject. It is notorious, that it is one half the business of grooms, who in general are the managers of their masters' stables, to stop up every crack and crevice to prevent, as they say, horses catching cold, although it cannot be admitted that their general system of treatment is but ill calculated to produce the desired effect. Looking at the matter, however, in a general point of view, as Professor Peal and Coleman observes, and speaking in the ordinary acceptation of the word, cold may be considered as a sort of open, undisguised enemy, whose attacks are constantly suspected, and whose approaches every one is prepared to repel. But, *volatile alkali is an enemy of a very different description, a foe that no one suspects, who silently and imperceptibly enters the citadel in the disguise of a friend, and thereby gradually undermines the very foundation of the edifice.* Before I conclude the subject of moon blindness, it may be necessary to notice some circumstances connected with this disease. Now in moon blindness, it mostly happens, that one eye only is attacked with inflammation, and on the disease subsiding, the other eye immediately becomes affected. Thus the disorder continues to fly from one eye to the other alternately, till a cataract takes place in both, and the horse becomes totally and incurably blind; but if the inflammation (how frequently soever it may fluctuate) continue confined to one eye only, and it ends finally in a hard, sometimes a bony cataract, the probability is, that the other eye will remain sound for many years, and perhaps during the lifetime of the animal.

The fact is so commonly known, that it has given rise to a practice at once both cruel and impolitic, that of thrusting

a red hot needle or awl into the diseased eye, with a view to the total destruction of the power of vision in the organ.

But the *vehemence* of the inflammation which is excited in the diseased eye by the operation, is sometimes so prodigious, that the sound eye becomes violently inflamed from sympathy, and the entire loss of both has frequently been the consequence.

Having already declared my opinion respecting the insufficiency of the most powerful medicine to remove such dense opacities of the cornea as are called films, if some application is insisted on, a little of the eye powder, No. 2, may be rubbed into the eye once or twice a week by way of rousing up the deficient energy of the absorbents.

ON THE DISEASES OF THE HORSE'S EYE.

In describing the diseases of the horse's eye, I shall endeavour to give some useful hints to inexperienced persons, who, though they may not have studied the anatomical structure of that delicate organ, may still possess some knowledge respecting it, yet, in difficult cases, may still be desirous of consulting a veterinary surgeon.

In addition to what I shall write respecting the examination of the horse's eye, I wish to observe, that the best situation for this purpose is a stable or barn, or or under an arch way, Mr. Coleman's favourite position; so that only a moderate light may fall upon the eye; this position being the most favourable to give a distinct view of the pupil, which in the orb is of a dark bluish colour, of an oblong form, the long diameter being in a horizontal direction, as in fig. 3, 4.

The following sketch drawn up from observations made during my residence and studies at the college, on Mr. Coleman's mode of examining the eye of the horse, will perhaps give a better idea to the young student of the form of the pupil, than can be conveyed by a lengthy description. It should be considered by every person desirous of being acquainted with the eye of the horse, that the size of the pupil varies according to the different degrees of light thrown on the eye. When the horse is placed under a stable or barn door, or under an arch-way, with his face to the light, both pupils should be exactly alike, and of the same size as in fig. 3; and as you advance the horse more into the light, both pupils contract, as in fig. 4 or 5; but if either remain unaltered in their dimensions, even if exposed to a stronger light, it shows that they are affected with the disease called gutta serena; or, if any inequality be observed in the pupils when thus examined, it may safely be inferred, that one of the eyes is diseased.

A person examining a horse's eye, must place himself against the shoulder of the horse, with his face against the side of the horse's head, and by holding the bridle or head stall in the right or left hand, on which ever side he may be standing, by waving the horse's head to and fro, the object looked looked for will be obtained.

A cataract is easily distinguished, when completely formed, by the white or pearly colour of the pupil, as represented in fig. 10 or 11; but in its more incipient stage, it is not so easily detected, but by those well acquainted with its structure, as the pupil is then only rather of a lighter colour, or more cloudy or opake than natural. A partial cataract is not by some people thought of so much importance: in this opinion, however, they deceive themselves; for I seldom or ever saw a partial cataract, or one in its incipient state, be the speck on the lens ever so small, but that one time or other blindness ensued at a more remote period. Nor do I know of any disease to which the horse is subject, that re-

quires more candour and judgment, in a professional man, than examination of horses for gentlemen under these complaints.

A partial cataract is when the white or opake speck is but small and near the margin of the pupil, as represented in fig. 6 and 7; but if there is more than one white speck, more within the centre of the pupil, or touching the lens, as in fig. 8, 9, 10 or 11, cataract is then formed, and proves not only a serious impediment to vision, but causes total blindness.

When horses are kept at grass during the hot summer months, they are very often stung about the eyes, and considerable swellings take place. The inflammation sometimes is not of much importance, and may soon go off; if, however, the horse is taken up, and his eyes bathed with the following lotion, it may soon disappear.

℞. Acetated Ceruses - - ℥i
Distilled or plain rose water, one pint.
Tincture of Opium - - ℥iss mx. and bathe the eye two or three times a day.

But if the opacity or outer coat should continue, and a film appear to be coming over the eye, the following eye-powder must be rubbed in once every day:

℞. Sal vitriol, or white vitriol, 12gr.
Nitre pulverized - - 5gr.
Honey or molasses, q. s. made into a thin ointment, and rubbed into the eye with a feather, or the thumb.

Inflammation of the eye is often produced from various causes; such as blows, bites, stings, in which the above salve may be used, and continued until the inflammation is abated. But when inflammation is produced from other causes, such as are pointed out in this Treatise, it will require the skill and judgment of a veterinary surgeon. This salve should

not be used; stimulating remedies are very often recommended for the removal of this appearance, and are sometimes a remedy, if not applied too early; that is, before the inflammation has considerably abated. I have sometimes known this medicine do good in old horses, when the pupil is considerably dilated and muddy, as it is called. In slight inflammation of the eye I have frequently used common salt well pulverized, and rubbed in under the eye lid, and all over the conjunctiva, or that part known or called by the common farriers the white of the eye.

DESCRIPTION

OF THE

PLATE OF THE HORSE'S EYE.

REPRESENTED IN A DISEASED STATE.

Fig. 1—Is a morbid dilation of the pupil of the eye. The black or dark brown substance, as represented at the margin of the pupil, is a natural appearance, though sometimes mistaken for disease.

Fig. 2—Represents the pupil dilated in a less degree, with an incipient and general opacity of the part.

Fig. 3—Represents the healthy state of the pupil in a moderate light. It should therefore be observed, that as the pupil enlarges, it approaches to a circular form, as in fig. 1 and 2; and by contracting, the diameter is lengthened, as in fig. 4 or 5.

Fig. 4—Represents the pupil, when the horse is brought out of the stable, and placed in the shade.

Fig. 5—Represents the form of the pupil when the eye is exposed to the direct rays of the sun.

Fig. 6—Represents the appearance of the pupil when the eye is affected with cataract.

Fig. 7—Represents a partial cataract; that is the appearance of white or opake spots in the pupil. In this case a considerable portion of the pupil is free from spots, particularly the centre; so that vision would not be materially injured.

Fig. 8—This represents a similar disease with some slight variations, as to the situation of the spots.

Fig. 9—Represents a more circular pupil with opacity in the centre, and on the side.

Fig. 10—Represents a contracted pupil, with considerable opacity, causing almost total blindness.

Fig. 11—Represents a pupil of the natural size with opacity in the centre, materially obstructing vision.

THE

DISEASES OF THE HORSE'S EYE

Are by no means so numerous as in the human subject, in which some hundreds have been reckoned; but, in horses, they are very obstinate of cure.

The diseases of the eyes in horses may be referred to one or two heads; the most common disease of the horse's eye is

INFLAMMATION OF THE CONJUNCTIVA,

COMMONLY CALLED

MOON BLINDNESS.

It is also very frequent in the horse's eye, and takes the name of Ophthalmia. This disease attacks horses very sud-

denly, and generally takes place in the course of twenty-four hours. It begins first in the most vascular part of the conjunctiva, and then extends to the conjunctiva covering the sclerotic coat, and from that to the transparent cornea.

SYMPTOMS OF OPHTHALMIA.

The eye-lids drop, the tears run over the cheeks, and more pass through the nasal duct, where drops of fluid may be seen at the extremity, which never are seen in a healthy state of the eye. This is an increased secretion, and no disease of the duct; the membrane nictatins, or haw, is thrown over the eye, with the dropping of the eye-lids, in order to prevent the admission of the rays of light, which in this state of the horse's eye would irritate it, and increase the disease. But ignorant smiths and farriers, mistaking the effect, and thinking the haw to be the cause of the disease, which they call moon blindness, remove this defence, which nature has given to the animal, and say that it is too long; nevertheless it is not unusual for us to find an eye that was to-day very much diseased and inflamed, quite clear in the course of the next day. This phenomenon is owing to the power of restoration being so great, in comparison to what it is in the human subject.

Now, it would be a phenomenon likewise to find this disease in an unbroke horse, it being always found in domesticated ones; in short, it is never found in colts, or in old horses, but it takes place between five and six years of age; probably the reason is, that at this period, when the animal has ceased to grow, and has arrived at maturity, then he is much more subject to disease; as we may observe in the human subject, people inclined to consumption are more liable to have it at maturity, than at any other period. For before

this time the blood was required for two purposes, for nourishment, and growth of parts. But it is now wanted for one purpose only—that of nourishment; the superfluous blood must, therefore, keep the animal in a state of plethora, and consequently subject him to inflammation in various parts.

The great cause of this disease is change of temperature, vitiated by the effluvia of the dung and urine fermenting in the stables, another by forming a poison capable of producing even glanders—before the general orders or ventilation took place by the orders of government, though his majesty's barracks, there were perhaps more blind horses to be found than in all the surrounding country besides. Unequal exercise contributes also very much to produce this inflammatory disease; for it is very common to see horses exercised and ridden very violently one day, *and for a whole week after remain at comparative rest.* We are not to consider this complaint as merely local; for when it is so, it is much easier of cure; being constitutional, and therefore also requiring constitutional remedies and treatment; but unfortunately we have not discovered a specific of this nature. The horse seldom perspires in this disease; and if he does, it is in excess, which manifestly shows that the constitution is affected, and there is also a slow lingering fever. If the animal is bled, purged, &c. the eye soon becomes clear; but at the end of five or six weeks, the other eye becomes inflamed, and gets also clear, and about the same period afterwards, the eye that was originally inflamed, now again becomes infected, and so on periodically till the patient becomes totally blind in one of them.

The degree of inflammation is various; sometimes it is so great, that the iris becomes affected, and a little deposit of lymph may be observed at its edge, and also at the edge of the little glandular bodies: this does not take place in the human subject; for though the iris is contracted, it is in consequence of sympathizing with the retina to prevent the ad-

mission of the rays of light: this deposit of lymph is most commonly at the inner angle of the iris, and at the edge of the superior glandular bodies, and is a fine indication of succeeding cataract and blindness; and as it is a deposition on the iris, it is very difficult to get rid of. The cornea is also sometimes as red as if washed with the venous blood, and neither the iris nor pupil can at all be seen, which is a sure sign of the cornea being inflamed. It frequently happens that the iris appears of a yellow colour; this, however, does not indicate any disease in it, but shows an incipient disease of the cornea, which now receives more serum into its vessels, than they can make transparent, because they are too much distended and enlarged to produce the effect; just as any coloured fluid will not appear transparent, if contained in a glass tube of an increased diameter. These circumstances will also apply to the disease when going off, as well as in its incipient state. In fact, this disease may be considered as a gouty inflammation of the eyes peculiar to the horse, being a periodical disease, and having the same appearance and affections in the horse as the gout in the human subject; for it is not of the same specific nature in diseases of the eye of man, the ox, the sheep, the ass, which so frequently resemble the horse in other things. In a number of cases, the inflammation is periodical, and blindness is sure to ensue, though not always in both eyes, from whence originated among smiths, &c. the abominable custom of putting out one eye to save the other. The most common and general termination of this specific opthalmia is in a cataract, which is an opacity of the chrystalline lens, which was before transparent; it generally becomes of a white or yellow colour, &c. and inclining to white in the circumference; sometimes the capsule of the lens becomes thickened, and even bony.

TREATMENT.

In the human subject, an operation is performed for extracting the cataract, which is generally successful in giving sight to the patient; but in the horse it is useless, and should never be recommended, because the important functions of the chrystaline lens must be supplied by two sort of glasses, convex, to see near objects, and concave, to see distant ones. Now it is utterly impossible to employ these to be of the same advantage to the horse; and without them vision is so confused, for want of the lens, that it is much better to have the animal quite blind, for he would be continually stumbling and starting at every object, of course of little value to his owner.

The only advantage of extracting a cataract in the horse would be when the animal is turned out to graze. But besides the objection before mentioned, there are still more; for the operation is very difficult to be performed, from the retractor muscle drawing the globe into the orbit, so much so that we cannot get at the cornea; besides this part is naturally much less convex than the cornea of the human subject. Mr. Coleman has, however, performed the operation by counteracting the action of the retractor muscle, by means of a double tenaculum, which is much better than a speculum, but still without success; for, after the operation is performed, the retractor muscle still continues to draw the globe into the orbit, and the eye of course appears less than its fellow, and the aqueous humour is continually escaping and preventing the union of the divided cornea, which from the irritation produced, inflames, as well as the iris and all the other parts, and the bulk of the eye is considerably diminished. The iris sometimes gets between the divided parts of the cornea, prevents the escape of the aqueous humour, and the wound heals.

Mr. Phipps has made many improvements in performing the operation on the human subject, but without any advantage to the horse, except in case of a white cataract, or if there should be lymph behind chrystalline lens and the vitreous humour; we may, in this case, remove or extract the lens, because after this is done, the animal is still blind. Another not unfrequent disease of the horse's eye is,

THE COLLECTION OF THE MATTER

formed by the iris, which gravitates to the depending part of the anterior chamber of the eye, and has a semi-circular appearance on account of the figure of the cornea. In this the pupil is always contracted, and if it is not soon removed, by pressing on the cornea and iris, it will produce blindness; therefore, as soon as it forms, we ought to puncture the edges of the cornea, just under the matter, with the point of a fine lancet, to allow of its escape. In performing this operation at the Veterinary College, I have repeatedly seen the aqueous humour secrete again in twenty-four hours.

The last disease of the horse's eye, which is connected with Opthalamia, is

GUTTA SERENA,

commonly, by grooms and farriers, called glass-eyes, be cause the eyes generally appear very clear and glassy. It is a much more frequent affection of the human eye than of that of the horse. The pupil is very much enlarged and dilated, in consequence of sympathizing with the nerve, which now is not capable of being stimulated by the rays of light; it generally arises from an affection of the brain, as staggers, or a blow on the head. When proceeding from either of these two causes, a cure may be performed, by bleeding, purging, blistering the top of the head, &c. and stimulating the nostrils with the vapour of vitriolic or marine acid. As to that disease of the eye, called

WATERY EYES,

it proceeds from an increased secretion of tears, which flow down the cheeks, in consequence of the lachrymal ducts not being able to carry all the superfluous quantity away, or from an obstruction of the nasal ducts, which terminates in a small hole as big as a No. 1 shot, and which may always be seen by turning up the lips of the nostril at the end of the nose.

Before I close this subject, I will give some account of the different trials made by Professor Coleman, at the Veterinary College, in order to cure, or rather to prevent, the formation of

CATARACT OR MOON BLINDNESS,

as it is called by common farriers, being, as I have before observed, a specific and gouty inflammation of the eye. My worthy instructor began with bleeding from the jugular or angular veins of the face, and at the same time employing purgatives frequently repeated, as well as diuretics, administered alternately one after the other. After which he tried all the medicines of Messrs. Phipps and Wathen, but without any degree of permanent success.

The local and surgical treatment was as follows:

1st. He ordered scarification, and to pass a seaton through the membrane conjunctiva, but without effect.

2d. He removed some of the large vessels going to the cornea, and divided them with the actual cautery, but without success.

3dly. We also applied leeches to the conjunctiva, without effect.

Note—I have, however, succeeded with leeches, if proper ones can be obtained.

Lastly, We have taken up both carotid arteries, which was of no avail, from the anastomosis which the vertebral arteries form with them.

Therefore, the treatment comes more within the province and judgment of a veterinary surgeon, and is confined entirely to bleeding, purging, and diuretics; fomentations of warm water, in order to diminish the irritation from the tears that run over the cheeks, with plenty of moderate and continual exercise to increase perspiration.

As to the case of watery eyes, it consists in diminishing the increased secretion of tears, by judicious bleeding and diuretics, with continual and moderate exercise. But when it is found to originate from an obstruction of the ductus-ad-nasum, a veterinary surgeon should be called to open the passage, by a proper injection of limpid lintseed, by a silver pipe of at least sufficient length to reach from the nasal duct to the inner canthers or corner of the eye. But if this should fail, the ductus-ad-nasum must be opened by a proper surgical instrument, introduced with great dexterity, from the eye to the nose.

In order to form a correct judgment of the nature of this fluid, it is only necessary to consider how provident nature has been in defending this delicate organ against danger: like a diamond of inestimable value, the eye is lodged in a strong bony box, protected in front by a covering of exquisite workmanship, and always kept moist by this fluid, and which is continually supplied by the duct at the inner canthers of the eye, in order to facilitate its movements, and thereby enable it to remove all extraneous bodies, such as dust, hay-seeds, chaff, &c. for conveying it also through the bony and grisly part of the nose, which is as large as a common goose quill, and as I have before said, terminating at the end of the nostril. Should we not admire the wisdom of Providence, when we see how wisely and mechanically, like unto a pipe, or outlet to a distillery for carrying off the waste liquor, is so mechanically contrived?

It is easy to be perceived, that the eye must constantly want moisture; but could the want of the eye generate this

duct, or bore the hole by which it is discharged, if nature had not thought it necessary?* There is also another fluid which lubricate the eye, and should not go unnoticed, which is, that the eye-lids of the horse are composed of a mixture of membraneous and cartilaginous substances, which terminates in that body called the tarsus. This part is extremely vascular, and its vessels are attached to what is called the *ciliary ducts*, which secretes a fluid for the purpose of moistening and lubricating the surfaces of the tarsi, and thereby preventing such consequences as otherwise constant friction would be apt to produce. When the tarsi becomes diseased, matter, as pus, is discharged, instead of healthy liquor; in this state, excoriations of the neighbouring parts, and temporary adhesions, (similar to what we sometimes feel in our own eye-lids when glued together,) may be expected. There are two muscles which perform the offices of opening and closing the eye-lids; which are not so plentifully supplied with hair in the horse, as in the human subject; they are few and scattered, yet they fully serve to protect the eye from insects or other substances. And as the tears contain a considerable portion of salt, they would constantly produce

* Nature produces nothing in vain, but ordains every thing for a wise use and purpose; why then do the smiths reason thus, and say, that the frog is of no use in the horse's foot, they therefore cut and pare it away, and thereby do more mischief in five minutes by that destructive instrument, the butrass, than nature can restore again in six months. And in order to show the evil tendency which this abominable practice at one time produced in the British army, the officers of the regiment were absolutely obliged to pass a martial law, that every farrier who was found guilty of this crime, was branded *on his posteriors* with a hot iron in front of his regiment. And if some of the sons of Erin, at the south end of the town, were to have this operation performed on them a few times, I am confident there would not be so many lame horses in Philadelphia as there now are; for I have have been witness to the abominable practice, and stood by and seen them deprive the frog of large slices, which I am confident it was not in the power of nature to replace in as many months.

irritation on the conjunctiva of the eye, did not this membrane secrete a mucus to defend it from such an effect.

The lachrymal gland, which is situated in the outer and superior part of the eye, has five, and sometimes six, excretory ducts, which, as before observed, convey the tears over the surface of the eye, by the puncta lachrymalia, and are hence by the ductus-ad-nasam conveyed to the nose.

This puncta in the horse is much larger than in the human subject. The horse having no *lachrymal sac*, the tears therefore are designed not only to preserve the transparency of the eye, but to prevent any ill consequence which might arise from friction between the cornea palpebræ. The lachrymal gland of the horse differs also from that of the human subject in not possessing a voluntary power, subject to the emotion of the mind; and this gland in the horse's eye is frequently diseased, and its action morbidly increased, as in piphora or watery eyes: this seldom occurs in the horse, but when it does, it is occasioned by inflammation, and must be removed by the means before pointed out.

AN EPITOME

OF

QUESTIONS AND ANSWERS

DRAWN TOGETHER WITH A VIEW OF CONVEYING

INSTRUCTION.

For the use of the Medical Students and others, desirous of

STUDYING THE DISEASES,

OBTAINING A KNOWLEDGE OF THE FUNCTION, USE, AND APPENDAGES OF

THE HORSE'S EYE.

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1. What is the Eye?

It is the immediate organ of vision.

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2. How many coats on the Horse's Eye?

Four, viz.—The Conjunctiva, the Sclerotic, the Choride, and the Retina.

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3. What is the Conjunctiva?

A thin transparent vascular membrane lining the lids, and covering the opake cornea and membrane nictitans. The

part over the cornea carries only serous blood, except in inflammation.

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4. What is the sclerotic coat?

A tendonous opake body, is very little vascular, has very few nerves, and contain the humours of the eye.

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5. What is the choride coat?

It is a vascular tunic, attached to the posterior and inner surface of the clerotic coat; its inferior and posterior part is covered by nigrum pigmentum, and its anterior and superior part in the horse is green.

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6. What is the retina?

A thin transparent vascular membrane, being the posterior part of the eye, anterior to the choride coat, and posterior to the viterous humour. But Mr. Bell divides it into two coats or lamina, the anterior of which is called the tunica vasculosa retina, or the central artery ramnifies the substance of the nerve.

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7. What is the use of the Conjunctiva?

In the first place it prevents any extraneous bodies getting into the posterior part of the eye, and there are small glands placed in the posterior surface called glandular sebaca, which secretes a mucus to defend it, the eye from irritation of the tears which escapes at small openings all over the transparent covering to the transparent cornea.

8. What is the transparent cornea?

It is a dense transparent body, a little vascular, (except in disease) few nerves, situated at the interior part of the eye under the conjunctiva; it is fitted into the opake cornea or sclerotica, as a watch glass is fitted into its case.

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9. What is the use of the choride coat?

Its principal use is, that the black parts absorb the rays of light, that enters the eye from above, and the green part reflects them back again, by which means they strike the retina twice, and gives as it were a stronger vision, by making a stronger impression on the optic nerve.

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10. What is the use of the sclerotic coat?

It is to contain the humours of the eye, and for the attachment of the seven muscles; its density prevents any enlargement of the parts, its being inelastic.

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11. What is the use of the retina?

It is the immediate organ of vision. It receives impressions, and conveys the same to the brain to perfect vision.

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12. How many humours has the eye?

Three; the aqueous, vitreous, and the chrystalline lens.

13. What is the aqueous humour?

A thin transparent watery fluid occupying the anterior and posterior chamber of the eye; it is convex anteriorly, and adapts itself to the convexity of the transparent cornea, and concave posterior adapting itself to the anterior convexity of the chrystalline lens.

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14. What parts the aqueous humour?

The iris.

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15. What is the crystalline lens?

A transparent lenteform body, hard in its centre, but less so in its circumference; it is contained in its bag or capsule, which is a continuation of the tunica vetera, and is attached to the cellular processes or ligaments; its anterior surface lies in contact with the aqueous humour, close to, but not touching the iris. The posterior surface is imbedded in the vitreous humour.

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16. What is the viterous humour?

That pellucid body which occupies all the posterior parts of the eyes that is not occupied by the choride coat and retina posterior to the crystalline lens; it is concave posterior, and slightly convex anterior; it is contained in circumscribed cells or cavities, which are beautifully transparent and vascular, from which the fluids are secreted.

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17. What is the liquor margani?

A small drop of transparent fluid contained between the crystalline lens and its capsule.

Its use, is to prevent friction between them; it is secreted by the exhalent vessels of the external surface of the lens, or the internal surface, or perhaps by both.

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18. What is the use of the aqueous humour?

It gives a convex shape to the eye anteriorly by pressing out the transparent cornea; it also assists in refracting the rays of light, and allows the iris to perform its functions by floating in it.

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19. What is the use of the crystalline lens?

Its use is very important; for without it, or substitutes for it, the eye would be of little use. Its principal use is, in bringing all the rays of light that pass into one focus on the retina, by whose aid the objects are pointed in it, to be conveyed to the brain. It is also a transparent lentiform body, contained in a capsule of its own, and is imbedded posteriorly in the vitreous humour, being surrounded anteriorly by an opake matter, termed the celliary processes, and between the capsule and its lens is the liquor margani. Mr. Coleman accounts for the eye adapting itself to near or distant objects by acting as a telescope and microscope to different densities of the middle edges of the lens. He accounts for it in this way: That in viewing a near object, as a fly, the iris dilates, the pupil becomes small, and compels all the rays of light to pass through its centre or most dense part. Whilst

viewing hills, or any object at a distance, the iris contracts, consequently the pupil becomes as large as possible to take in all the rays of light through the circumference or less dense part of the lens. This action, by Sir Everard Home, was accounted for by the action of the muscles in altering the convexity of the transparent cornea.

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20. What is the iris?

It is an oblong body attached to the tunica sclerotica about a line's breadth posterior to the junction of the transparent cornea with the opake cornea or sclerotic coat, and is said to be the only part that perform the office of a muscle and a gland. It is kept in its situation by, and floats in the aqueous humour. It is composed of two sets of fibres, the one radiated, and the other circular, or as other spincta muscles.

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21. What is the use of the iris?

It acts as an internal eye-lid in shutting out the superior rays of light, and it is instrumental in altering the eye from a near to a distant object, and secretes the aqueous humour.

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22. What are the cellary processes?

They are a continuation or reflection of the choride coat, being thrown into folds, and covered by nigrum pigmentum on both sides, and occupies all that part between the cornea and crystalline lens.

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23. What its use?

To secrete the aqueous humour, and prevent the rays of light from passing through the vitreous humour without first passing through the lens, to prevent confusion of vision.

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24. What is the nigrum pigmentum?

A black or other coloured pigment covering part of the choride coat, iris, and cellary processes; it is classed by some veterinarians with the rete-mucosum, or middle skin, it giving colour to the iris, &c. whence blue, black eyes, &c. where the hair is light, the eyes are so, and vice versa.

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25. What is its use?

Its use is to absorb the rays of light that are not wanted for vision. It is secreted by the exhalent vessels of the parts which it covers. There is also in the eye of the horse three or four glandular bodies placed at the superior edge of the iris, which is covered by ligaments, and which, when the pupil is dilated, totally disappears; but when the pupil contracts, or becomes small, these bodies appear, and their use is very obvious, which is in absorbing and shutting out some of the rays of light when too strong.

ON THE DISEASES OF THE HORSE'S EYE.

26. What diseases are the horse's eye subject to?

Strictly speaking only two, which are inflammation and its consequences, and which are ophthalmia, cataract, &c. and gutta serena or paralisis of the optic nerve.

27. What is the cause of inflammation?

Change of temperature, foul air, foul stabling, and unequal exercise also contribute to produce this disease.

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28. What are the symptoms?

The eye-lids drop, the tears flow over the cheek, the membrane nictitans (called the hooks) is generally drawn over the eye, to prevent irritation from the rays of light.

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29. How would you treat the disease?

As for local applications they are seldom of any avail, except in the most incipient stage of the disease. Mr. Coleman mentions numerous experiments, which were of little or no effect. He has opened the temporal veins, taken up the carotid, maxillary, and temporal arteries; in fine, he has tried most of the specifics of the human subject of Messrs. Phipps and Walthen, oculists, without any permanent good. This disease the common farrier calls moon blindness. It has an inflammation very like the gout, an eye being diseased at a time, and that eye will frequently get clear in the course of one night, and the other become affected. If the inflammation proceed from a blow on the head, the usual prescriptives here laid down will generally effect a cure; but if it is constitutional, there is seldom any permanent relief. You will generally find that it attacks horses about five or six years of age, and seldom after eight or nine; before five or six years old, the blood is wanted for two purposes, namely, for the natural secretion of the growth of the animal, after which time it is wanted but for one purpose; consequently, the system is more plethoric, and likely to take a more inflamed ac-

tion. I do not mean to say that any age is exempt from it; this disease puts on different appearances; sometimes the cornea is red, sometimes yellow, and sometimes of an opake white, and inflammation may go on without redness of the part, as in the chrystalline lens; sometimes, to a superficial observer, it would not appear at all inflamed; it generally attacks the horse in the night, and gets better in the day time. A proof that foul air aggravates the disease is, that in the cavalry, ten horses lost their eyes from standing on litter all day long; and now these causes are removed, from 125 to 150 horses are saved in every regiment.

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30. What is a cataract?

An opacity of the chrystalline lens or its capsule, preventing the rays of light passing to the retina.

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31. How would you ascertain this disease?

I should place the horse with his head, under an arch, or out of the stable door, then placing myself against his shoulders. Should a small spot appear in the middle of the lens, I would pronounce cataract. But if not perfectly satisfied, I should get a candle, and hold in the front, and then place myself posterior to the horse's eye, to see more distinctly.

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32. What is gutta serena?

It is a parallisis of the optic nerve.

33. What are its symptoms?

A total loss of power of the optic nerve, so that light makes no impression on it, the pupil being insensibly dilated, and the eye at the same time appearing perfectly clear and bright. It is termed by the common farriers glass eyes.

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34. How would you treat this disease?

I would bleed, give physic, and apply stimulants to the eye, and blister the head.

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35. What are wall eyes?

Nothing more than a light coloured pigment covering the iris.

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36. What divides the eye into two chambers?

The iris.

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37. Which is the largest humour of the eye?

The viterous.

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38. Which is the thickest humour of the eye?

The crystalline lens.

39. What is the use of the eye?

It is to receive, refract, and unite the rays of light, and paint the object upside down on the retina.

A TABLE

OF THE

MUSCLES OF THE HORSE'S EYE.

NAMES.	ORIGIN.	INSERTION.	USE.
Orbicularis palbebræ or sphincter.	From all round orbit from the os frontis—ungus, malar and temporal bones.	Into the skin of the eye-lids, all round being a sphincta muscle.	To shut the eye.
Levator palbebræ.	From the posterior part of the orbit.	Into the eye-lids.	To open the eye-lids in opposition to the above.
The short oblique.	From the anterior and inferior part of the orbit, from the orbicularis near the nasal duct.	And is inserted obliquely into the sclerotic coat.	To draw the eye forward, as is seen by the starting when the animal is alarmed.
Long oblique trochlearis.	From the posterior part of the orbit a little above the short oblique from the sphenoid bone.	Passes through a trocherais, or pully turns round, and is inserted into the inner and upper part of sclerotic coats.	Draws the eye forward and towards the body, and passes through it, as in the os frontis.

The adductor oculi.	From the posterior part of the orbit.	Into the inner part of the sclerotic coat.	To draw the eye towards the head.
The depressor oculi.	From the posterior of the orbit below the adductor.	In the anterior and inferior part of the sclerotic coat.	To derpress the eye when looking towards the ground.
The abductor oculi.	From the posterior part of the eye.	Into the anterior and exterior part of the sclerotic coat.	To draw the eye from the body.
The levator oculi.	From the superior part of the orbit above the last mentioned muscle.	Into the anterior and superior part of the sclerotic coat.	To draw the eye upwards.
The retractor oculi.	From the posterior part of the orbit, and surround the optic nerve.	Into the whole part of the sclerotic coat.	To draw the eye into the orbit.

THE MUSCLES AND APPENDAGES OF

THE HORSE'S EYE.

1. The lachrymal gland

Is placed in the superior and outer canthus or corner of the eye, under the orbitary process of the os frontis.

Its use

Is to secrete the tears.

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2. The cellular ducts

Pierce the conjunctiva at its superior part, and convey the tears to the anterior part of the eye.

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3. The tears

Are secreted by the lachrymal gland, most during day. The use of the tears are to wash the anterior part of the eye, assist in removing extraneous bodies, and to keep the eye transparent.

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4. The conjunctiva

This is a vascular membrane lining the eye-lids, and is reflected over all that part we touch with the finger in the living animal; it is very vascular in that part lining the lids, but less so covering the opake cornea, and still less so covering the transparent cornea.

Its use

Is to prevent extraneous bodies getting into the eye, and that part lining the lids secretes a mucus to prevent the tears excoriating the eye, which mucus is conveyed over the eye by the motion of the lids.

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5. Puncta lachrymalis

Are two; the inner canthus or corner of the eye, within the conjunctiva, one on the upper, and one on the

lower eye-lid, and when joined are large or larger than the nasal duct.

Their use is to carry the tears to the nasal duct.

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6. The ductus ad nasum

Perforates the os unguis, and is in part bony, and in part membraneous, and terminates nearly at the extremity of the nose.

Its use

Is to carry off the tears.

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7. Caruncula lachrymalis

Is a small black body at the inner canthus of the eye, between the two punctures, and is not entirely covered by conjunctiva.

Its use

Is to direct the tears between the two punctures.

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8. The transparent cornea

Is oblong in form, and is composed of dense transparent materials, being a sort of strata, or layer upon layer, is convex anteriorly; it is also imbedded in the opake cornea like the glass to a watch case, and is broad at the inner canthus.

Its use

Is to assist by its convexity and density, by breaking down the rays of light, and its connexion with the opake corner, assists in retaining the aqueous humour in its situation.

Note—It has absorbents and nerves.

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9. The opake cornea or sclerotica

Is the outer coat of the eye, and is attached by cellular membranes to the posterior appendages, as muscles, &c. it is opake and inelastic, and is perforated by the optic nerve.

Its use

Is to contain the viterous humour, and to protect the posterior part of the eye. It has but few blood vessels, absorbents or nerves.

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10. The chorides

Is a black reticular membrane composed of two layers, and its lining the sclerotica, and is covered in part by a black pigment, and in part by a variegated coat. The variegated coat is the superior and largest in proportion. *Note*, by taking an ox's eye, and cutting it transversely across, and letting out the humours and the lens, the two variegated colours, black and green, are beautifully exemplified.

Its use

Affords a surface for the expansure of the optic nerve, and the black inferior pigment called the nigrum pigmentum absorbs the superfluous rays of light, while its variegated superior covering reflects them back again, and thereby striking the optic nerve twice, and giving a double effect to the organ of vision. It is very vascular, and has numerous absorbents and nerves.

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11. The retina

Is an expansion of the optic nerve on the anterior surface of the choride coat, having a web-like membraneous appearance.

Its use

Is to convey the sensation of light to the brain.

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12. The aqùeous humour

Is a watery fluid contained in the anterior and posterior chamber of the eye, and is supposed to be secreted by the cellular processes of the iris.

Its use

Is to keep the transparent cornea convex, to reflect the rays of light, and enable the iris to perform its functions, by affording a space for its contraction and dilation.

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13. The anterior chamber

Is all that space between the posterior part of the transparent cornea, and the anterior part of the iris, and is filled with aqueous humour.

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14. The posterior chamber

Is all that space between the posterior surface of the iris, and the anterior surface of the chrystalline lens, and is filled with aqueous humour.

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15. The chrystalline lens

Is a transparent lentiform body, contained in a body or capsule of its own, and is imbedded posteriorly in the vitreous humour, being surrounded anteriorly by an opake matter, termed the cellulary processes, and between the capsule and its lens is the liquor morgiani to prevent adhesion; it is convex on each side, but most in its posterior part; its centre posteriorly being the hardest, and more convex than the other. It is broader and flatter anteriorly, than it is posteriorly.

Its use

Is to refract, break, or bend the rays of light, and bring them into one focal point on the retina; its hard broad centre acting as a microscope, and its flat softer margin performing the office of a telescope. Its microscopical powers to obtain a

knowledge of near objects, and its telescropical powers to obtain a knowledge of distant objects. It is supposed to compose a number of very minute tubes, containing white blood, arteries, nerves and absorbents, and is supposed by Astley, Cooper, and Professor Coleman, to be the seat of cataract.

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16. The cellulary processes

Are a continuation or reflection of the choride coat being thrown into folds, and covered by nigrum pigmentum on both sides, and occupies all that space between the cornea and chrystalline lens, and lays in contact with the outer portion of the chrystalline lens.

Their use

Is to secrete the aqueous humour, and prevent the rays of light from passing through the vitreous humour, without first passing through the chrystalline lens, to prevent confusion of vision.

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17. The cellulary ligament

Is seen and situated just before the chorides gives off the cellulary processes. The outer lamina of the chorides being formerly fixed to the sclerotic coat by a sort of ligamentous circle, which is termed the cellulary ligament.

Its use

Is to connect the outer lamina of the choride coat more firmly to the sclerotic.

18. The vitreous humour

Occupies the whole back of the eye, posterior to the chrystalline lens, so that the posterior part of the lens is imbedded in its soft and delicate surface, and is admirably adapted to lay in contact with the retina. It is composed of a number of circumscribed cells, containing their watery fluid within a tunic, but it has one membrane, containing or enveloping the whole.

Its use

Is to expand the bulb of the eye, posteriorly to lay in contact with the retina, and to bend or refract the rays of light passing through the optic nerve.

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19. The Iris

Is a muscular body, having two orders of muscular fibres entering into its composition: the one orbicular, and the other radiated, and is covered with nigrum pigmentum on both sides; it is attached to the transparent cornea, one linc's breadth anterior to its junction with the sclerotic coat.

Its use

It forms the colouring matter of the eye, assists in secreting the aqueous humour, and by its power of contraction and dilation regulates the quantity of light passing through the crystalline lens. The blood vessels are curious, one artery going round its circumference, and another round its centre. There are also numerous small arteries connecting the two

like the spokes of a wheel, so that in structure it resembles a coach wheel with its spokes. At the internal margin of the iris are seen some little glandular bodies, three or four superior, and sometimes one or two inferior, but the superior are the largest, and they are covered by nigrum pigmentum.

Their use

Are to assist the iris in regulating the rays, when too strong.

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20. The membrane nictitans

Is a cartilaginous body placed at the inner canthus of the eye, having one part anterior, and one part posterior to the transparent cornea; it is in part covered, and its edges or two sides fastened by conjunctiva, and is edged with black. It is attached by cellular membrane to the posterior part of the eye, and may be considered as an appendage to the retractor muscle, its action being dependant on that. It is entirely concave, externally convex; and, when under inflammation, it projects, particularly in lock jaw, owing to the retractor muscle drawing the eye inward, to avoid the irritation produced by the rays of light. This is what the *ignorant part of the community* take for the hooks in lock jaw.

Its use

Is to defend the eye from injury, and to wipe off any extraneous bodies, such as sand, insects, hay-seed, and to assist in cleansing the eye with the tears, as a sponge does with water.

21. How many muscles has the horse's eye.

Seven; the elevator, the depressor, the abductor, the adductor, (long and short oblique,) being the oblique externus and oblique internus, and the retractor oculi, which acts in the eye when under inflammation, and which grooms and smiths call the hooks.

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22. Give their origin and insertion.

The four recti or straight muscles, which are elevator oculi, draws the eye upwards. The depressor oculi draws it downward, as when in the act of grazing; the adductor draws the eye towards the forehead, and the adductor draws it towards the temple; they all arise from the bottom of the orbit, and are inserted in their tendons into the clerotic coat about half an inch posterior to its junction with the transpa rent cornea. The oblique externus, trochelaris or oblique muscle arises from the back part of the orbit, and passes through a ligamentous trochelaris or pully, at the superior part of the orbit, and is inserted into the anterior and superior part of the orbit, and is inserted into the anterior and superior part of the clerotic coat, and draws the globe outward and inward. The oblique internus or obliqueous brevis, arises from the inferior and anterior part of the orbit near the ductus-ad-nasam, and is inserted into the inferior and superior part of the clerotic coat. It serves also to draw the eye inward, and Mr. Coleman supposes, that when these muscles act together, that they rotate the eye. The retractor oculi arises from the bottom of the orbit, and is inserted all round the posterior part of the clerotic coat. But Dr. Munro supposes, that its use was to support the eye whilst the animal was grazing, without the assistance of the retractor oculi.

But this, Mr. Coleman says, cannot be the case, as other animals have it which do not graze, as dogs, wolves, bears, lions, tigers, &c. which are carnivorous animals. It is therefore evident, that the principal use of the muscle is, to draw the membrane nictitans, or curtain of the eye, called by some the haw or hooks, into the orbit, when the eye is suffering under inflammation, to defend it from the superfluous rays of light. J. C. V. S.

VETERINARY

OBSERVATONS AND REMARKS

ON THE

DISEASES OF THE HORSE'S EYE;

Shewing forth the Agency, powerful Influence, and Effect which the effluvia, arising from the Dung and Urine of Stables has, in causing

BLINDNESS IN THE EYES OF HORSES:

Being the substance of a Lecture delivered at the

DUBLIN VETERINARY COLLEGE.

Shewing forth how all these Evils were remedied by the

INTRODUCTION OF VENTILATION,

BY PROFESSOR COLEMAN,

Through all the Cavalry Barracks of England, Ireland, and Scotland; bringing home conviction to the mind of every unprejudiced man, the impolicy of converting Stables into Store-houses and Manufactories of Manure,

BY JAMES CARVER, VETERINARY SURGEON, PHILADELPHIA;

Interesting to the Physician, the Student, the Gentleman, Farmer and Grazier.

SUBSTANCE OF THE LECTURE,

INTERLARDED WITH VARIOUS

OBSERVATIONS, *etc.*

HAVING through all my practice, in this country, both on Long Island and in this city, laid great stress on the necessity of a free ventilation in stables, it will, I hope, sufficiently apologize for being diffuse on this subject.

The great share which litter has in contributing to vitiation of the atmosphere of stables, and in this way producing some, and aggravating many of the diseases of horses, it may be thought there cannot be much necessity for me to go minutely into a detail of its effects under this head. But as I am of opinion that the subject of litter, though not entirely overlooked, has in comparison of its vast importance, been but superficially inquired into, even by scientific writers in our art, I shall, therefore, prefer exposing myself to the charge of tautology in the discussion of it, than omit any point which may appear likely to elucidate the effects of its agency on the health of horses, and thereby probably effect that desirable change so much wanting throughout this country. For I have long been impressed with the conviction, that the materials that are commonly used for litter in this country, are, on account of their being so susceptible of putrefactive fermentation, the chief cause of curtailing the natural period of the life of horses, by silently and slowly undermining the very principles of their frames, and that the volatile alkali engendered in the litter, is, at least, capable of aggravating the disease of cataract, called moon blindness; and the more we consider the phenomena of this disorder, the more we shall be justified in concluding, that the litter is the grand cause of producing this singular affection of the eye. For though it must be admitted that some inexplicable peculiarity of structure does certainly exist in the outer coat

of the eye of the horse, which lays him more open to the derangements in its functions than any other animal which we domesticate, yet there can be no question that this prior susceptibility of disease is called into action chiefly by the means of the volatile alkali, which I have long, like Professor Peal, been trying to obtain converts to: I have heard it objected, that dogs that are crowded together in kennels, and which must, consequently, be subjected to the influence of a fouler atmosphere than that of stables, are not particularly subject to disorders of the eyes, and very rarely become blind until old age.

But if this argument be fairly investigated, it will be found rather to strengthen than to invalidate that which I am endeavouring to support. For we must not suppose, that the putrefactive fermentation, the parent of volatile alkali, goes on in kennels, notwithstanding the nauseousness of their stench, in any degree that it does in stables. We must distinguish in fact between the effects of odour, and those of the putrefactive process. The smell of kennels, it is true, is often loathsome to a great degree, from a variety of causes, and chiefly, perhaps, from a concentration of the effluvia which exhales from the skin of dogs, by which means the atmosphere becomes no doubt in a considerable degree vitiated. But it must be recollected that dogs, except in extreme cases, instinctively avoid contaminating their beds with their urine, or fæces, which would be the means of exciting the fermentative process in the straw, and thus, as little or no putrefactive fermentation goes on in their beds, so little or no volatile alkali will be generated from this source. If any one will take the trouble of comparing the pungent effects which are produced upon the eyes and nose, by the air of stables, with the merely nauseous smell produced by that of kennels, he will have no hesitation in admitting the validity of these remarks. Now, the facts that have been already adduced on the authority of Dr. Egan, may serve to convince us, that the urine alone would be capable of diffusing an abundant

quantity of volatile alkali in the air of stables, independent of any other source. The professor says, not having an opportunity of making a set of experiments on the urine of different animals which would enable him to speak positively on the subject, he cannot venture to assert, that the urine of the horse contains more urea or gelatine than that of other animals, but I think we may reasonably presume one or other of these circumstances to be the case. For, Fourcroy and Vauquelin have ascertained the difference which exists in different urines, as to the susceptibility of the putrefactive process, depends on the quantity of urea which they contain, and it has been proved that the rapid putrefaction of urine is owing to the action of gelatine on that singular substance. And further, we know from the experiments of these celebrated chemists, that urea is the great source of the volatile alkali, which is generated during the putrefaction of urine, inasmuch as 288 parts of urea were found to yield by distillation 200 parts of carbonate of ammonia, and, according to Dr. Thompson, 100 parts of urea are composed of 39.5 parts of oxygen, 32.5 azote, 14.7 carbon, 13.3 hydrogen. We see then most satisfactorily by the chemical analysis of urea, that this substance contains all the elements of carbonate of ammonia, which is the state, I apprehend, that salt exists in so largely in the air of stables. Now and then, however, it is found in stables in a caustic state; for I have been frequently struck with a fact that takes place when lime washers are employed in whitening the walls of stables, which illustrates the phenomenon called by chemists single elective attraction, and proves at the same time the presence of the salt in immense quantities. For, as the volatile alkali, which is deposited largely on the walls and ceiling of the stable, exists in a state of carbonate, no sooner is the lime applied than the carbonic acid quits the ammonia, to unite itself to the lime, for which it has a greater affinity, and thus at the same instant that the lime is converted into chalk, and becomes mild, by

the union of the carbonic acid, the ammonia becomes caustic by the loss of it.

The difference with respect to its pungency is instantly manifest; for I have always observed, that the workmen (especially if they were occupied in lime-washing filthy and ill ventilated stables) become unable to bear the effects of the caustic volatile alkali upon their organs of sight and smell, which, in these cases proves so insufferably pungent, as to oblige them to desist from their work, and run out into the open air, from time to time, in order to escape from its influence. These facts will serve to fortify others that have already been adduced, by way of proving the great quantity of volatile alkali which is mixed with the air of stables; as it cannot be doubted, that such portion of it as is deposited on the walls and ceilings must have its origin from the urine and litter, and has been previously mixed with the atmosphere. In an essay wrote on Farcy and Glanders, by Professor Peal of the Dublin College, also Professor Coleman, has proved that these formidable diseases are the offspring of this ordinary stable management, and that they are more commonly originated by the system of the individuals that are the subjects of them, than propagated, as is usually supposed to be the case, from one horse to another by contagion. And I am strongly impressed with the conviction, that the use of such fermentable materials, as litter, when they came to be acted upon by the urine and fæces of the horse, chiefly give rise to these maladies, which hitherto baffled the utmost efforts of our art. For we can adduce facts to prove, that hot and vitiated air has been found sufficient to excite these diseases in the course of a few hours, in the instance of a troop of horses which were cooped in the hold of a transport, the hatches of which were battened down for three days and three nights: when the hatches were opened on the third day, nine of these horses were found dead, and nearly the whole of the troop were attacked with either farcy or glanders.*

* I have repeatedly heard Professor Coleman say, that if a horse was shut up in a close stable, entirely deprived of ventilation, and the animal

It is a fact well known in some parts of South America, where the heat, not altogether so great, is yet sufficient to expedite the putrefaction of vegetable and animal matter

suffered to breathe over and over again the effluvia arising from his own dung and urine, that the glanders would be produced in 72 hours.

Professor Coleman also asserts, that the moment parturition is accomplished, the subsequent existence of the animal depends so much on respiration, that they either enjoy health, activity, and vigour, or become enfeebled, emaciated, and diseased, according to the degree of purity or state of contamination of the atmosphere in which they breathe. For it must be observed, that the air in its passage through the lungs undergoes a decomposition, the oxygen or vital part being absorbed by the blood, and with this part carried to every part of the system, to which it imparts life and vigour; the azotic gas thrown off by expiration, though it may contain its elasticity, is nevertheless deprived of that vivifying principle so essential to life; hence it will appear, that disease must necessarily prevail in stables where a great number of horses stand together, where the roof is low, and there is no ventilation by which the air can ascend. The pavement of these stables also, either from bad execution or want of repair, generally retain the urine evacuated by the horses, which, together with the dung and heat, a noxious exhalation is constantly arising, that greatly tends to increase the impurity of the air.

That abominable custom also, so much in common practice among the grooms of this city, of letting the litter remain under the manger during the whole of the day, merely because it is a little trouble to remove it into the air, should also receive attention.

There cannot be a greater proof of the correctness of this supposition than the following circumstance: When Mr. Coleman received orders from the Cavalry Board of Control, to ascertain and find out the causes of so much blindness existing among the cavalry horses; his first inspection commenced at Woolwich Barracks, where the roofs of the stables were extremely low. The men in ascending the ladders to remove some of the building for the purpose of ventilation, dropped from the ladders like dead rats, which caused Mr. Coleman to believe that the contaminated air which had so long been the cause of producing disease, but more particularly blindness among the horses, was confined in the upper part of the building, which proved to be the case. The roofs having undergone the necessary repairs, the horses were of course returned to their original situation, and I have often heard Mr. C. say, in his lectures, that government, by this salutary step, do not now lose 10 horses a regiment, where they before lost 100.

with great celerity; horses are, on account of their small value, not only not stabled, neither are they subjected to the pernicious effects of fermentable litter, the use of which is, as well as shoeing, comparatively unknown in that part of the world. These are strong, and, I believe, incontrovertible facts. Nevertheless, so impossible is it to extricate altogether, even liberal minds, from the trammels which custom imposes, that I have frequently found it difficult to convince gentlemen that my opinions were not rather the dreams of hypothesis than the result of nearly thirty years' theory, practice, and consideration. And as to people in general in the habit of associating the notion of what is called a comfortable stable, with the conviction of the propriety of the ordinary discipline which grooms and coachmen deem so essential to the well being of their horses, that as I have before observed, that that man who shall propose a free circulation of air, the laying aside the use of clothing, and that horses should stand through the day time upon the pavement, or in their stalls without litter, and all with the sole view of securing them against disease, runs the hazard of being considered a fitter inhabitant for a mad house, than having any pretensions to the possession of his rational faculties. And invariably through all my practice since my arrival in this country have I endeavoured to inculcate the idea, that it is always much better to prevent than to cure disease, and not unfrequently has my opinions been objected to as hypothetical, even from those whose good sense ought to have taught them better,* but contradicted them merely, because it did not suit their convenience to alter them, and that if my arguments were not so, why do we not find, they say, a greater number of instances of moon blindness, farcy and glanders, than we do; inasmuch as the stable system which I decry is pretty nearly the same all over the country. To which I answer, that all glass blowers do not die consumptive; all plumbers do not become paralytic, nor are all chimney-sweepers affect-

* A very strong instance of which occurred in this city in the stable of Wm. Sansom, Esq. of Arch-street, the particulars of which will be noted hereafter.

ed with cancer of the scrotum; but it will be readily admitted by every man who is a competent judge of the facts, that the occupations which these respective persons follow occasions the diseases to which they are peculiarly liable. And though I have repeatedly insisted upon the prejudicial effects of a superabundance of heat in the air of stables, as the means of subjecting horses to rapid vicissitudes of temperature, which occasions so many fatal inflammatory diseases, yet I do not consider that the heat of the air operates to their disadvantage upon the large scale, as the volatile alkali with which it is in a manner saturated, in low confined stables. And this is in fact the sole reason why glandered horses that have been a long while at grass, and appear, on account of the ceasing of the running at the nose, to be cured of the disease, have the disease excited afresh when they are brought back into the stable, although this circumstance is commonly attributed to the heat of the atmosphere of the stable, or to the loss of the green food, which they have been previously accustomed to. For in this instance the volatile alkali operates as a morbid external stimulus to the membrane of the nose, just as it does in that of moon blindness upon the outer membrane of the eye. I have thus glanced at some of the most prominent inimical effects of litter, on the general health of the horse: it now remains for me to speak more particularly of its effects on the feet and legs.

Now, though the facts which Mr. B. Clark has adduced on this subject, must be quite sufficient to satisfy the minds of every unprejudiced person, that contraction of the feet of such horses that stand upon litter, does not proceed faster in the stable, provided they be not shod, than it does while they are at grass; in other words, though this gentleman has proved that iron shoes, be their form or mode of application what they may, is the great source of mischief to the feet; yet I cannot help thinking, that he has somewhat under-rated the influence which the inflammatory agents of the stables must have, in accelerating contraction when once began. For though I am far from doubting the accuracy of my instruc-

tor's inductions as to the shoe and nails, being the occasion of most of the evils in the feet, yet I do not think it follows by any means that these instruments are the original cause of the mischief. If, however, it can be proved, that the shod feet of horses that are kept abroad do not contract so rapidly, as the shod feet of those that stand constantly on litter (a fact I think not easily controvertible) it must be pretty plain, that the use of the litter is not only inimical, but one of the chief agents of all the mischief. I am moreover of opinion with what Professor Peal says, that the practice of letting horses stand upon litter is injurious to their feet, for other reasons than merely this of accelerating contraction. For I cannot but consider the soft cushion that the straw furnishes to the feet, must render the elastic fibres that connect the fibres of the coffin bone less capable of bearing the shocks which they are necessarily subjected to, when the horse is trotted or galloped on artificial roads.

Thus it is that horses which are just taken up from grass, and immediately rode upon hard roads, are so frequently attacked with acute inflammation of the lamina, which is a sudden founder of the feet, and so very often supposed to be produced from other causes. The chief means, however, by which litter becomes so prejudicial to the feet of horses, is by heating it; and this it does not by communicating heat to, but by confining it to that organ. For the materials of which litter is composed, being slow conductors of heat, will prevent the hoof from ever becoming so cool and pliable as it otherwise would be, in case the horse stood upon pavement, the materials of which being better conductors of heat than straw, though actually not much cooler, will more rapidly carry off the heat from the hoof.

But he continues to observe, we are entirely misled by our feelings on this important point, and obeying their immediate impulse, our language (philosphically speaking) becomes incorrect. For, if cotton, wool, or fur, which we call very warm articles, be exposed to a frosty atmosphere, and their heat af-

terwards measured by the thermometer, they will be found to be as cool as marble or stone, that has been exposed to the same temperature, although, if we feel the former, we say, they are warm and comfortable, because they carry off the heat of our skin slowly, and if we touch the latter, we pronounce them extremely cold, because they conduct it very rapidly from the surface of our bodies; it is evident, therefore, that the use of litter must be prejudicial to the feet of horses, by confining their heat, and thereby rendering the hoofs drier, harder, and more liable to crack and chip away, when under the hands of the smith, consequently less elastic, inevitably exasperating the evils which the practice of shoeing brings along with it: the use of oil also, which I have so much reprobated, aggravating the cause, by rendering them incapable of being acted upon when immersed in the bath. And in that disease of the frog called the thrush, which is an inflammation and ulceration of the sensible frog, which lays under the horney insensible frog, wet litter must of course increase the complaint, from the acrimony of the putrid urine, which so often causes a thrush to terminate in canker.

Further, as Mr. Coleman observes that nothing is more inimical to the limbs of horses, or which tends more to cause that winter disease of horses, called grease, which does not proceed, as is supposed, from vitiated blood, or foul humours, but from inflammation of the capillary vessels of the fetlocks, in consequence of the rapid changes of temperature, to which this part of the animal is so frequently exposed; for even if litter is perfectly dry, by surrounding the fetlocks, it will confine the heat of skin, and thus render it very ill calculated to bear the effects of a frosty atmosphere; and what is more, if it be wet, it will act as a two-edged sword, by keeping the skin in an unnatural state of heat so long as the horse continues to stand upon it, and thereby be the means of exposing them to a more intense degree of cold when the horse leaves the stable, than would otherwise follow, in consequence of the rapid evaporation that will take place from the surface,

when exposed to the external air; and when once that part is inflamed, the skin cracks and chops, and small ulcers are formed by the acrimony of the putrid urine, which always proves highly irritating, unless we could find some article not so highly fermentable, which might be brought into general use as a substitute for the materials so commonly used on those occasions; and which, by many, may be thought little better than declamation, to inveigh against the mischiefs which they produce. It should therefore be recollected, that there are many evils, both in the natural and moral world, which, though they do not admit of being entirely prevented or remedied, may nevertheless be mitigated in a great degree: this I apprehend to be the case with regard to the use of litter.

For from what has been premised, it must be readily seen, that the mischief resulting from its use are produced not only from one, but from both causes, viz. the heat of the atmosphere and the urine of the animal. But if only a little more attention to cleanliness, and a proper ventilation, which I have so earnestly recommended through all my practice, will enable us to keep the air cool during the hot summer months of the year, how many diseases might be prevented? It should therefore be a great object with every one to prevent the urine from being absorbed by the litter, by every means in our power. For this reason, horses should stand through the day time, upon the pavement, which should be so constructed as to carry off the urine into a reservoir purposely made for its reception, on the outside of the stable. For, though this excretion operates so much to the disadvantage of the health of horses, when it comes to be mixed with the litter, which is of too much value in rural economy, and too precious a material to the practical farmer, not to be husbanded with more care than it appears people in this country have yet any idea of. For although I am writing and endeavouring to convey instruction, which must materially operate against my own practice, it behoves me as a veterinarian to point out

those evils which it occasions in producing disease, and I also consider it a duty not less incumbent upon me, to advert to the importance in which this article, as a manure, is now considered all over Europe. In fine, the urine of the horse is now considered to be of more value than the dung itself, so much so, that this subject has of late excited the attention of many of our first chemical philosophers, and we may rest assured that we are but yet in our infancy of knowing rightly how to appreciate its value, as applicable to the purposes of agriculture. For it is the very property of urine which occasions it to be so very hurtful to the health of horses kept in stables, which renders it of such valuable importance as a manure, namely, that of being so readily susceptible of putrefactive fermentation; the farmer ought, therefore, to preserve it with as much care as the apple of his eye. The contents of the reservoir should, from time to time, be thrown upon such heaps of dead vegetable matter as he wishes to convert into manure by the putrefactive process, and in order to save and accumulate the greatest quantity possible, the pavement of the stable should be so constructed, and of such materials as to admit of very few interstices, for they occasion the lodgment of the urine, which readily gives the first impulse to the fermentative process in the litter, especially when assisted by the heat communicated to it from the body of the animal when he lays down. Wooden floors, though in general use in this country, are not good for many reasons: in the first place, they are seldom or ever made as they should be, of the very heart of well seasoned oak; and wood in any shape, even if constructed of the very best materials, will imbibe and absorb the urine, from which must, even with all our care, exhale volatile alkali.

The odds and ends of the pieces of stone which we see lying about the stone-cutters' yards, I have often thought would be an excellent material for this purpose, and the stall might always be so constructed as to admit of a small slope on each side of it, and by having a small iron grating

placed in the middle, which might always be so constructed as to be removed at pleasure for the admission of the urine, would, I think, be a good material for this purpose. And for reasons which have been before stated, it must be evident that the pavement of stables, when constructed of convex stones, as they generally used to be in Europe, must always contain a quantity of leaven, if I may so speak, sufficient to communicate the putrefactive process to the fresh litter when laid over it.

And for this reason, it would greatly contribute to sweeten and cool the atmosphere of stables, if gentlemen would make their servants, during the summer months, wash their stalls once a day; and this might always be done so as not to dilute the urine in the reservoir. The whole of the litter should be removed early in the morning, and the wet parts carefully selected from the rest, in order to be thrown upon the dung-hill; the remainder, whenever the weather would permit, should be spread abroad for some hours in the sun and open air, suffering no heaps of litter or fæces to remain in or near the stable.

This plan of managing litter, to be sure, would be attended with a little more trouble to Tom, Dick, and Harry; however, be that as it may, it would not only contribute to purify the air, but to the general health of the horse.

The mere saving of straw, however, would be a bad species of economy to every man whom manure was an object to, particularly if the utmost care was taken to prevent the urine running to waste, but should, from time to time, be thrown on the dung heap, which would be the means of saturating the whole of the straw with the urine.

And though this method of managing the straw, when the saving of it becomes an object, by applying the urine to it out of the stable, will be found to render the mass of manure less in quantity than what is produced by the usual mode, yet the quality of it would be materially improved, and the farmer might use it in the state of what is called

long dung. For, the equable application of the urine to the straw, will insure the rapid putrefaction of the entire mass. And as the use of long dung, on the principle of economy, has been strongly recommended by that illustrious chemist, Sir H. Davy, and is approved of by that celebrated Norfolk farmer, Mr. Coke, and many other enlightened practical agriculturists, solely on this account, it must therefore be pretty evident to the advocates of this system of manuring, that the method of saving and applying it to the straw, which I have recommended, holds forth incalculable advantages. For, as long as urine and straw can be obtained, the process of manure-making may be constantly and regularly carried on. And if any urine should remain, after the straw is completely saturated, it might be advantageously employed in forwarding putrefaction, in any other sort of dead vegetable matter, and thus considerably contribute to the interests of the farmer. Indeed the circumstances of saving straw would, to many, prove a loss to them, as it is by no means an uncommon practice, in some places, to supply the livery stable-keepers with straw for the sake of receiving the manure in return.

But all proprietors of horses will find it more to their advantage to encourage the putrefactive fermentation of the litter out of doors, than in their stables; which, judging from the pungency of the atmosphere, and the heat of too many, one would imagine was the object meant to be obtained. At those times, and at those places however, where the value of straw becomes great as food for cattle, the dried haulm or potatoe tops may be substituted for it as litter, and has been recommended for that purpose, on the highly respectable authority of Mr. Curwen: but though there can be no doubt that the haulm would be a very good substitute for straw, yet the use of it for litter would require great circumspection as to the cleanliness and ventilation of stables; for, as it contains a great deal more fermentable matter than straw, so there can be no doubt that it would be the means of diffusing more vo-

latile alkali in the atmosphere. Many individuals, particularly in this country, and I believe in all parts of it, might readily find a supply of saw dust, which would make an excellent litter, especially that produced from all species of firs; also the dried leaves in the woods, which would resist putrefaction very strongly, on account of the turpentine they contain.

In many parts of Europe, but more particularly in India, sand is used as a litter to lie on.* Sand and saw dust I know is good, and in this country might be readily procured: however, the inimical effects which litter has upon the health of horses, when composed of the ordinary materials, and managed as they now are in this country, it must nevertheless be admitted that a considerable portion of good springs to the community from this very evil. For, though the superiority of stable manure over many other kinds of putrid vegetable, and animal composts, has been considerably overrated, yet it cannot be denied that it is of immense value in agriculture.

The grand object however with me, in writing this Essay, is to point out and expose whatever I may have seen and witnessed, particularly on Long Island and among the Pennsylvania farmers, as well as in the city of Philadelphia, what I know to be so productive of causing so much blindness, as well as every way prejudicial to the general health of

* As respects litter, I cannot help making some remarks here respecting this article, which will no doubt both surprise and astonish many respecting the use which is made of the dung of horses and elephants for litter, but more particularly among the princes, nabobs, and great men of the East, and which they prepare in the following manner:—The dung is dried in the sun, and sometimes pounded and sifted, and then laid in the stall about a foot or more in thickness for the horse to lie on, and the glossy appearance and effect this material has on the skin of the animal is surprising. The dust on the animal is removed in the morning by a cloth, and he is then well rubbed with thick coarse hair mittins. Tan, if it could once be properly introduced, would, I should suppose, make one of the finest substitutes for litter in the world.

that noble animal. For, on Long Island, it is notorious, that three horses out of every five through the island, is blind with cataract; and if any one will only take the trouble for the space of one week, to walk up and down Market-street, he will, I believe, find that I am not very far out of my calculation, as respects this state and city. This certainly is, or at least ought to be, a paramount consideration with those whom it may concern; though perhaps, if we look at it in another light, there is no one more concerned than myself; for if people are determined to continue on, in their old way of stable deception, by suffering their horses to stand literally on hot beds of manure, and are determined to give no ventilation to their stables, certainly, as a veterinary practitioner, the more grist will continually be coming to my mill; whereas, by bringing home to every man's bosom these facts, which, in the course of time, must, and will be brought on, I shall, of course, never die a nabob. I shall now close this subject, by recommending the most scrupulous preservation of urine in reservoirs, instead of suffering it to be diffused in puddles in the manner it now is in stables generally, and thereby suffered to run to waste.

I have endeavoured in fact to show, not only that urine becomes the great means of heating and vitiating the air of stables, and thereby laying the foundation of diseases, but that this process, so necessary to the farmer, may be as effectually carried on, as far as the object of manure is concerned, out of doors, though perhaps not quite so rapidly as in the stable. And as facts, not theory, have long ago proved to many of our first veterinarians, the inestimable value of urine as an article of manure, I have, with them, laid considerable stress upon the necessity of carrying it off into reservoirs, for the purpose of afterwards being thrown, from time to time, upon such materials as require to be fermented.

For however strong my conviction may be of the impolicy of converting stables into storehouses and factories of manure, I might have hesitated in urging the matter so strong-

ly, if I had not seen that the industrious farmer might be benefited, as well as the general health of the horse secured against disease, by attention to these few hints loosely thrown together, and after what has now been said on this important subject, it will not, I hope, be thought superfluous to suggest, that dunghills should never be made in situations where the unwholesome vapours arising from them can find their way into the stable.

J. C. V. S.

FACTS,

INTERESTING TO THE

Gentleman, the Farmer,

THE GRAZIER AND THE BUTCHER;

BEING AN ACCOUNT OF AN

Epidemic Disease,

Which has lately been prevalent in England, and now prevailing in this city, and on the Lancaster line of stages, belonging to John Tomlinson and others;

TOGETHER WITH

The Causes, Symptoms, and best mode of Treatment,

BY WHICH NUMBERS HAVE BEEN SAVED.

BY DR. JAMES CARVER,
VETERINARY SURGEON.

ALSO, AN ACCOUNT OF THE SAME DISEASE AMONG

OXEN, COWS AND SHEEP.

REMARKS AND OBSERVATIONS

ON THE

EPIDEMIC CATARRH,

Which prevailed in this city during the winters of 1815, 16, 17 and 18, and various other parts in and surrounding the city of Philadelphia, and now prevailing on the Lancaster line.

IT should be understood that the epidemical diseases of horses generally assume the form of catarrh or cold, affecting principally the membranes of the nose, throat, windpipe and lungs, and are often accompanied with fever. The disease varies considerably in degree; sometimes attacking with great violence, at others so inconsiderable as to require only an opening diet, and a few doses of some cooling medicine for its removal. This distinction, however, requires the judgment and experience of a veterinary physician.

In the winter and spring of 1814, this disease was very prevalent at the Veterinary College, during my studies at that institution under Professor Coleman.

Osmer, in his treatise on the diseases of horses, has given a good description of an epidemic that raged among horses in the year 1750. Some, he observes, had a discharge of matter from the eyes, nose and mouth; others had none; but in all, there were tokens of inflammation, attended with fever and violent cough. Most of the horses, which had a discharge from the nose, &c. lived; and where such discharge did not happen, or a critical abscess fell on some part, most of them died. He was led to try the use of rowels, and soon experienced a good effect from them; the horse in about thirty hours became more cheerful, and recovering his appetite, and in another day, generally appearing quite well. Rowels had the same good effect in horses that discharged at the nose, and they got over the disease much sooner than those who had no such assistance. If the horse be attacked with violent fe-

ver, and dry cough, without any discharge from the nose, he advises being bled largely, but observes that whenever there was a discharge from the nose, bleeding appeared to do harm. In both circumstances, however, he advises cooling medicines, and clysters occasionally.

A stud of mares and colts, of various ages, were attacked with this distemper: some had a discharge from the eyes, nose, and mouth; and some had swelling on the udder, shoulder, or the under jaw.

They were taken to a house, bled and rowelled; had nitre given to them, by which treatment the disease was soon got under, excepting in the sucking foals. When swellings appeared in any part, they were opened as soon as matter had formed in them. Some had setons inserted in the depending part of the swellings, with a view of drawing off the febrile matter, but this treatment proved unsuccessful; the tumour neither advanced nor receded. The setons were then taken out, and no medicines given, and in a few days the swellings came to good matter, which being let out, the animal soon got well. But for the sucking foals no remedy availed; the disease baffled all the attempts of nature and art. If you bleed them, a swelling perhaps comes on the parts, and would remain indurate for several months; hard swellings would also arise on other parts: in short, as long as they sucked the mare the disease continued, but upon being weaned they soon got well. He observes, that the distemper began in general with considerable weakness of the limbs, so that a horse would be seen to reel and stagger, when led from the stable; there was generally a dry cough, the eyes would suddenly become dim, glared as lifeless, and the horse showed no inclination to drink.

Osmer divides the distemper into five different classes or degrees: in the first, besides the symptoms first mentioned, there was a coldness of the external parts, and the weakness was particularly observable in the hind limbs. There was also appearance of fever or inflammation.

In this class of the distemper, bleeding uniformly did harm; and if done largely, it generally proved fatal; even when the horse was costive, no advantage was derived from clysters, and rowels appeared to do harm. He advises the following medicines to be given three times a day for a few days, or until the urinary secretions appear to be augmented, and the horse appears to drink freely, upon which he generally becomes well on a sudden, recovers his limbs and his appetite, and is free from all complaint but his cough, which perhaps leaves him not entirely until he recovers his flesh. The horse's diet at first should be hay and scalded bran; his drink should be moderately warm, and given freely.

Rx.—Crude sal ammoniac -	one ounce.
Nitre - - -	one ounce.
Castle Soap - -	half an ounce.
Camphor - - -	two drachms.

Mx.—For one dose.

He particularly directs that this medicine be discontinued so soon as the horse appears to be relieved, and the evacuation of the urine much increased. He also advises the horse to be allowed a more nourishing diet, such as bran and oats scalded together.

In the second class, there is considerable fever; the external parts, hot and burning, and the horse appears to be affected in his head and sight.

Here he recommends moderate bleeding and clysters, as well as the medicines directed in the first class. If the fever continues twelve hours, and the membranes about the eyes appear inflamed, he thinks another moderate bleeding proper, which will generally be sufficient; but in this or future bleedings, the direction for so doing is to be solely taken from the tokens of inflammation; remembering, that in this disease, horses can bear only the loss of a small quantity at one time. The blood of horses, labouring under these symptoms, is generally very sizy; in which case he considers rowels very improper. For such as are affected with soreness of the

throat, (third class) bleeding, clysters and rowels, he says are all improper, unless there be manifest tokens of fever and inflammation: in either case, the medicine before directed is proper. These horses will eat bread—water gruel, if made thin. Soreness of the throat is indicated by a difficulty in swallowing. It is seldom accompanied with much fever, and their appetite for eating and drinking seems better than in those of the first and second class; but they are in general miserably reduced before the soreness goes off, which he does not consider as the effects, solely, of their fasting.

Fourthly. Others are seized at first, with a cough only, and show little or no symptoms of illness. These, in general, have soon a discharge from the nostrils; they recover sooner than any, and frequently without assistance. He advises, however, rowels and a diet of scalded bran.

Fifthly. In others again, an abscess or boil appears soon after the cough, in some part of the head or body, which sometimes soon comes to matter. In others, their lives are manifestly endangered before an imposthumation can be obtained, even with the assistance of art. In this class of the distemper, he advises the application of poultices to the swelling, in order to bring it to matter as speedily as possible, and the medicine as before directed in the first class, &c. By these different methods, he says, he has saved the lives of many horses, having lost a few only out of a great number. But he acknowledges, that when the distemper first appeared, he endangered the lives of many.

Vegetius describes an epidemic, or what is considered a contagious fever, which corresponds nearly with Osmer, only he divides it into two classes: he recommends oily injections into the nostrils, anointing the head with oil, and keeping it warm, and giving a mixture of *diapente*, being gradually increased to two spoonfuls. He recommends also, something similar to rowels. It will appear, no doubt, to the attentive reader, that Osmer's description has the appearance of being the result of careful observation. There is also a degree of candour in his confessing, that previously to his

having attentively studied the nature of the distemper, he endangered the lives of many horses, which certainly deserves praise. With respect to the description of Vegetius, though some may value it for its antiquity, it will probably be thought by most persons, that his prescribing a mixture of old wine and diapente, was by no means judicious, particularly if the operation of mixing these ingredients was left to the groom, who, possibly, might be tempted to drink the one and throw the other away.

To discover and account for the nature of the distemper among horned cattle, which raged so many years in Europe, and moreover to discover a cure, appeared at that time as difficult and unpromising a task, as it was of old, to untie the Gordian knot. From accounts of Rammazani and Lancisi, two learned physicians of those times, it raged with great violence, as appears from accounts published by them, in 1711 and 1715, which is now more than one hundred years ago.

Ancient history, both sacred and profane, furnishes us with accounts of pestilential diseases among horned cattle; and one of the sorest plagues which God inflicted on the obdurate kings of Egypt, near 1600 years before Christ, and which proved the destruction of all Egyptian horned cattle at those times. The severest plague of this kind appeared in the year 810, which not only destroyed every head of cattle in the army of the emperor Charlemagne, but through his dominions also. In 1713, in the kingdom of Naples, it extended through the country from Rome to Rome, and from hence into Germany, France, Flanders, Holland, Great Britain and Denmark.

The same countries which breed the plague and small pox, seem to have propagated this contagion. The autumnal heats in different parts of Asia and in Africa, the putrid effluvia from the Ganges and the Nile, or from corrupted stagnating waters, which contaminate the blood and juices of the cattle. In the year 1800, while residing in the district of Rungpoore, not far from the Naupal mountains, I was an eye-

witness to one of those epidemics, which at that time was sweeping off the cattle by thousands, particularly the sheep, bred in those parts for the Cashmere shawl factories. Many flocks of these sheep, then near the factory where I resided, suffering very much from the severe inundation of the waters of the Ganges, which at that time had overflowed the whole country for thousands of miles, I was applied to by the natives for relief and assistance, and having on many former occasions saved many of their cattle from the various complaints with which at different times they were afflicted, I have the pleasing satisfaction of declaring, that I saved many hundreds of their flocks by inoculation with vaccine virus; an account of which I transmitted to Washington Custis, Esq. of the Arlington Society, near the seat of Washington, prior to my departure for England, and which that gentleman published in a small pamphlet, which I left in the hands of Reuben Haines, when I left this city for my studies at the Veterinary College.

The most serious epidemic that has occurred for several years to horses, made its appearance during my residence in England, in the spring of 1814, and during the months of May and June raged with great violence. In many places the symptoms were alarming, and much inconvenience was suffered from the suspension of animal labour, and the expense of veterinary medical attendance; yet it does not appear to have destroyed many horses, while in others its fatality has been considerable, but in the metropolis it is said to have made great destruction. Though much has been written on the epidemic diseases of cattle, and many conjectures suggested as to their origin or causes, it does not appear, that much light has been thrown on the subject. It must be allowed, however, that such attempts were very laudable, as they were considered the only probable means of discovering a mode of prevention, or such a mode of treating the disease, as might effectually arrest its progress, before its dreadful effects were generally felt. If we read the accounts of the authors before quoted, no doubt will remain of the

contagious nature of these diseases. So destructive have they been at some periods, as to cause the most serious alarm, particularly about the beginning of the last century. According to Lancisi's account, there died in the ecclesiastical states, from October, 1713, to April 1714, 8,466 oxen used for ploughing, 10,125 white cows, 2,216 red cows, 108 breeding bulls, 427 young bulls, 451 heifers, 2362 calves, 862 buffaloes, male and female, 635 young ditto; in all, 26,252 cattle, in seven months.

This writer thinks, that if the computation had begun from the 2d of August, the number of cattle that perished would have amounted to 30,000.

It is fortunate for mankind, that so dreadful a pestilence has not happened for many years; the epidemic diseases of a much less formidable nature have several times appeared.

During my residence at the college in 1814, a great number of horses were attacked with a complaint, which Mr. Coleman called influenza, and we had at the college near twenty attacked at one time; and last winter, in this city, the same complaint made its appearance in the stable of Mr. John Carter, where six horses nearly all at one time were attacked. Mr. Carter called me in, and by following the same mode of treatment as was prescribed by professor Coleman, at the Veterinary College, I have the pleasing satisfaction to say, that every horse was saved. Mr. Carter, I recollect, was very much alarmed, and thought that that dreadful disease, the glanders, had made its appearance, and it was with great difficulty that I prevailed on him to believe the contrary.

In the latter part of the winter, seven or eight horses more, belonging to Mr. S. Allen, in Sixth-street, were all attacked with the same complaint; two of his own, and one belonging to Mr. Hampton, suffered very severely, and it was with great difficulty they were saved. Mr. Allen and also Mr. Carter will, no doubt, satisfy any inquiries that may hereafter be found necessary on this occasion.

If there is any part of my professional labours which may not have come under inquiry, or the notice of the public, here are facts in point and on the spot which will bear neither contradiction nor doubt.

An account of the symptoms and mode of treatment in this complaint, will probably not be unacceptable to my fellow citizens. The most common symptoms of this complaint was a general debility, sometimes attended with cough, and sometimes not, dullness of the eyes, attended with a small degree of inflammation, and a disinclination both for food and water. These symptoms were soon followed with a discharge from the nostrils, and soreness of the throat, and the glands about those parts causing more or less difficulty in swallowing, which the grooms complained of very much, and sometimes to such a degree, that in attempting to drink, the water would return through the nostrils, and very often some of the horse's food would be found mixed with the matter discharged from the nose. On the first appearance of the complaint, I generally found it necessary to bleed, sometimes freely, making the pulse my guide, and this I found particularly necessary when the breathing became quick and laborious, and which may always be observed by the motion of the flanks and nostrils, when the pulse was high and the inner membrane of the eye inflamed. In some of the above cases, when I found no abatement of the symptoms in ten or twelve hours, and particularly if blood had been drawn sizy and of a yellow buff colour, the bleeding was repeated; but this was not found necessary only in three instances before alluded to, at Mr. Allen's stables, and in once instance at Mr. Carter's: when the bowels were costive, I gave a mild laxative, with small doses of nitre, night and morning, and in these two cases, where no medicine was given for several days, except in a liquid form.*

* In two of the above cases, one at Mr. Allen's, and also one at Mr. Carter's stable, I found the difficulty of swallowing so great, that I contemplated the operation of bronchotomy: this operation, however, was

To relieve the soreness of the throat, blistering ointment was applied under the throat, and over the glands, as high up as the root of the ears. In one of these cases at Mr. Carter's, a rowel was inserted under the jaw, which being kept open, was found very beneficial. Blistering, however, appeared to have the best effect, though sometimes inconvenient, from the horse rubbing against the manger. When considerable weakness was observed, the patients were freely supplied with gruel or marsh, and when the throat was not sore, tonic and cordial remedies were given.

It is here necessary to observe, that tonic or cordial medicines, at the commencement of the complaint, should never be had regard to, and even when they do appear necessary at a later period of the complaint, it should always be first ascertained through the medium of the pulse, that no inflammatory symptoms exist, nor should ever be persisted in, when they appear to cause uneasiness, or diminish the appetite, or increase the frequency of the pulse. We generally find during spring, and during early summer, a catarrhal disease is very common, particularly among horses, and which has some resemblance to that just described. During the present early part of summer, a disease of that kind has been very prevalent. Mr. Roach has a fine colt, which only a few days ago had a slight attack of this complaint: this horse had been under a course of medicines, but on being removed to his own stable, where the ventilation was somewhat better than where he formerly stood, he soon recovered: though I have several patients now under treatment for the very same complaint. This complaint has attacked some horses at grass, as well as those in the stables; in fine, it has occurred under a variety of circumstances, and though young horses have appeared most obnoxious to it, many aged horses have been attacked.

not performed, though at the Veterinary College I assisted Mr. Coleman in performing this operation on eight or nine different horses for this complaint, which was attended with great relief to the animal.

And it is under these circumstances, when both old and young are attacked, apparently under the same symptoms, that it requires the judgment and experience of a veterinary physician.

The most common symptoms of this complaint is a cough with a soreness of the throat, though this symptom does not always occur at the commencement of the disorder, but often comes on during the progress of the complaint. The cough is commonly the first symptom that attracts notice, and is generally accompanied, even at first, with a loss of both spirits and appetite. A discharge from the nostrils generally takes place after three or four days, and sometimes the matter is of a whitish colour, like strangles, and which I always found in those cases at the college as well as in the present, a favourable symptom; at others, it is mixed with the horse's food, and consists in a great measure of what he endeavours, though unable, to swallow. This indicates inflammation of the throat, and requires the immediate application of a blister. In almost every case that I met with, both in this city and at the college, I found bleeding to be proper; and in some instances, where I found horses attacked with great severity, the pulse much increased, the breathing, and heaving of the flanks quicker than usual, with some inflammation of the eye, and the first drawn blood sizy, and thickly covered with a buff, I have found repeated bleeding, twice and three times, of the greatest advantage. But this should not be done without great caution, preserving every quantity of blood, taken away for inspection and examination, is absolutely necessary; for when found free from buff, no further bleeding is necessary. Horses labouring under this complaint, should always be carefully attended to; for it sometimes happens, that when the horse is supposed to be going on well and no danger suspected, that he is suddenly attacked with difficulty and quickness of breathing, with other symptoms, denoting approaching inflammation of the lungs; and if at this time a large quantity of blood be taken off, the horse will be reliev-

ed, and a dangerous inflammation of an important organ will be averted. The disease has sometimes occurred in so mild a form, as to require only a little nursing for its removal. It is, however, always proper to lay the horse up, and attend to him carefully, the disorder sometimes suddenly assuming a more serious appearance, without any visible cause. To attempt to work a horse in this complaint, however slightly you may do [illegible], is highly improper; in several cases that have come under my notice, life has been endangered, and such debility produced, so as to render the animal useless for many months, and an incurable cough is not an unfrequent effect of such imprudence.

Having thus given a detailed account of the epidemic, which prevailed in Osmer and Gibson's time, as well as that which has occurred and fallen under my own practice and observation in this city, it may be proper to remark, that notwithstanding the apparent perplexity of the symptoms in Osmer's description, from his dividing the disease into five classes, and the difference between his and that which I have given of those which have occurred in this city, compared with those which occurred during my studies at the Veterinary College, they are really the same kind of disorder, though different in degrees; this difference may be traced in all epidemic diseases. At the same time a careful examination and comparison of them, will prove that there is no essential difference in our mode of treatment. Though the remedy he recommends as a diuretic, I certainly cannot approve of; but any thing that will increase in a moderate degree, particularly where there is no difficulty of swallowing or weakness, I think, would be highly proper. Gibson, who wrote on horses seventy years ago, describes an epidemic very similar to that which has occurred, and which he is decidedly of opinion was very infectious. He says, "about the end of the year 1732, there was a remarkable distemper of this kind among the horses in London, and several other parts of the kingdom. They were suddenly seized with a

dry, vehement, and sounding cough, which shook them so violently, that some of them were ready to drop down with hard straining and want of breath. Their throats were raw and sore, and many of them had hard kernels, swelled and sore to the touch. For the first two or three days, most of them refused all manner of food and water,* and had so many other bad signs, that, when the disorder first broke out, many were afraid of a mortality coming among them; a running at the nose generally came, begun on the third day, and continued in so profuse a manner for five or six days, that some of them discharged as much, in that time, of purulent matter, as two or three pails would hold;† while the running at the nose continued, they did not feed much, and the loss of flesh was very great; but so soon as the running abated, they eat voraciously, and soon recovered their strength."

From many of Gibson's remarks, he considered this a contagious disease. Several horses have certainly been attacked in the same stable, and among those belonging to Mr. Tomlinson, on the Lancaster line, it appears that three horses out of a team, and sometimes the whole four have been attacked in succession. It is necessary here to remark, that horses subjected to the draught, have appeared to suffer more from the complaint than others, particularly where they were (as those certainly are) exposed to sudden changes of the weather. It should also be taken into consideration, that hot and ill ventilated stables, are particularly favourable, to its production as well as progress, and horses that are fed high, as all stage and post horses are, appear more susceptible of the disease than those of other work. The way in which those horses of Mr. Tomlinson's were first attacked, I will endeavour to detail in his own words as near as possible, for

* As was universally the case with all the horses attacked, belonging to Mr. Tomlinson, on the stage line to Lancaster.

† Though in no instance has the running at the nose been so profuse in any of those cases attended by me. The case of Mr. Hampton's horse, and also a horse belonging to Mr. Allen, was to be sure, uncommonly great, particularly when the nose bag was applied.

I did not myself see them till several days afterwards. The first symptoms were a loss of appetite, which began with violent shivering, a cold skin, quick pulse, and a laborious perspiration, attended with cough and a discharge from both nostrils, which began a few days after the commencement of the attack; two cases which I attended at Downingstown, had already terminated in inflamed lungs. These two horses had been attacked some days; I found them labouring under the above disease, with a strong pulse at 95, though not so strong at either the temporal or maxillary artery. I took away five quarts of blood, and administered such medicine as I expected would lower the action of the heart and arteries, and in the morning, the horses appeared much relieved, and the pulse reduced to 70. The medicine was repeated, and I did not see them till the same evening, about six o'clock—pulse reduced to about 60, when the same medicine was given in the same quantity; during the night they had ate up all their feed, and in the morning appeared more lively, and the cough much relieved from the application of a former blister, and in this convalescent state I left them, with proper directions, and under perfect hope of recovery. Of the other two horses, ten miles further, at Sadsbury, one horse was on the mend, and as I considered, out of danger; the other had terminated in glanders.

It may be necessary here to remark, that from the accounts which I received from England, in the months of May and June 1815, the weather it appears, had been extremely variable, and that cold winds and rains were more prevalent than usual. It should be observed, also, that it was a part of the year when catarrhal complaints or colds, were very common among young horses. How far the combination of those causes may have produced the late epidemic, independent of contagion I am not prepared to determine. It however appears from every inquiry which I could make among the farmers

to the westward, while on my journey to see Mr. Tomlinson's horses, that the weather for the time of the year, had been very variable also, the sun through the day being very warm, and the mornings and evenings remarkably cold and frosty.

I cannot, however, conclude this subject, being one of importance, as it regards horses, without impressing on the mind of the reader, the necessity there is, in these cases, of the strictest attention on the part of the groom; for I do not know any disease excepting inflamed lungs, that requires so much diligence and nursing, as those which have now come under our notice. I also feel it my duty not to quit this subject without saying a few words respecting a servant belonging to Mr. Allen; he is a Dutchman, and I believe goes by the name of John; the faithful diligence with which this man attended two or three of Mr. Allen's horses, during the severity of the complaint under which they were suffering, command my higest praise. I cannot, at the same time, omit returing my thanks to Messrs. Allen and Carter, for their ready and cheerful compliance in all my requests, when attendance, assistance, or aid, in any shape was necessary, and to their unremitting diligence and attention, by good nursing, to which I attribute my success in the recovery of every horse.

J. CARVER, V. S.

One horse belonging to Mr. Ideler, of Arch-street, I believe, died: this case I was not called to attend.

FURTHER OBSERVATIONS AND REMARKS

ON THE

EPIDEMIC FEVER, OR INFLUENZA,

WHICH STILL EXISTS AND PREVAILS IN AND ABOUT THE

CITY OF PHILADELPHIA,

UP TO THE PRESENT DATE OF JUNE 15, 1818.

INCLUDING A RECITAL OF FACTS AND CASES OF HORSES BELONGING TO GENTLEMEN NOW RESIDING IN THE CITY OF PHILADELPHIA.

THIS complaint, for a variety of causes which will herein be explained, has now become so very prevalent, as to deserve the attention of the citizens and publick generally. —This distemper, murrain or pest, by many so called, among cattle, at various times, as did some few years ago, prove a terrible scourge to the agricultural interest, and indeed to the world at large. And we learn from history, as I have before stated, that this malignant epidemic, was not unknown among the ancients, which produced such ravages among their horses and their kine as to induce them to make solemn fasts, to appease the Divine wrath, and avert the calamity.

Epidemic Diseases—are such as are generally prevalent among all kinds of horses and cattle in general, at some particular time, the liability being the same throughout, and the cause equal; but the origin, apparently dependent on some change taken place in the bodies of all the animals, at that time sponstaneously, or perhaps from something applied from without, as the external air, improper food, or miasmata

in any form; these diseases may be contagious or they may not. But in epidemics another induction is now added by some of our first writers on that subject, and that is prevention, to enable him effectually to undertake a preventive treatment, and which is my general plan under all circumstances of disease, whether in the *head*, *the bowels*, *or the feet*, and to do this we must ascertain if possible the exciting cause.

Endemic Diseases—by our first writers are considered those peculiar to a particular climate, or place, confining their effects principally to the animals inhabiting those parts; these diseases are thought to be but few in the brute subject.

Sporadic Diseases—are those that are confined to one place, and stand in direct opposition to the former, and are a very widely diffused class, and comprehend such as have a peculiar cause, and affect particular constitutions or ages: thus strangles, which generally goes in this country by the name of the distemper, becomes a sporadic disease to young horses, and the distemper a sporadic disease among dogs.

Specific Diseases—are such as are peculiar to a particular class of animals: thus *Farcy*, *Glanders*, and *Strangles*, are among the specific diseases of the horse, popularly so called, is one peculiar to dogs.

We shall now treat of the proper knowledge and management of this one and the same disease under different heads: —their *causes*, *symptoms*, *diagnosis*, *prognosis*, and *cure*.

The causes are sometimes involved in obscurity; at others, by attention and observation, they may be discovered; and again, in some instances, they are evident at once. The symptoms of a disease are the immediate effects it produces: Thus an inflamed brain, being productive of vertigo, and delirium, and redness at the eyes, makes delirium and redness of the eyes a symptom of an inflamed brain; but this does not take in any other than the immediate effect; for death is frequently a result of this disease; but death is not a symptom of an inflamed brain.

From the symptoms we form our diagnostic of the disease: that is, we judge of its present state. When we are masters of this, we are led to form a prognosis or opinion of its probable termination.

The Cure forms the most important part, and consists in an attempt at assisting Nature in her efforts to produce a natural remission of the disease. If these efforts are wanting or inert, we promote an artificial one, or we attempt to resist the efforts of the disease.

The malignant epidemic Fever, called *typhus gravoir*, or *maladie epidemic*, has been raging for some time in the East Indies, though under another form. It has also lately been very severely felt in Europe. And from the accounts which have lately been received from the former as well as the latter place, has still made it doubted whether horses are subject to putrid fever. However, whether they are or not is a discussion we will not now enter into, it being more applicable to our present condensed subject to state that it has carried off some hundreds of horses in both countries; and whoever has observed a horse first attacked with the mild or common epidemic, which then proceeds through all the stages of morbid debility, to throw out the most fœtid sanies, from the nose, the mouth, the stools, and all the secretions betraying the same fœtor; and at last the whole cellular membrane becoming affected with serous effusion, as is now the case with Mr. Charles Watson's mare, which has been seen by Dr. Dorsey and several gentlemen of the city, called and termed by the farriers water farcy, the treatment of which disease being so very different, and the medicines so opposite to what should be applied in such cases that they generally kill; then they say "Oh! the horse was rotten; who the d——l could save him?"

Among horned cattle its ravages are too notorious, and its character too well marked to need argument; and it may too also be considered as a full proof of the liability of the horse to the same, it having occurred that during the ravages of

the malignant epidemic among cattle, horses have also become affected, though it must be allowed, that this has but seldom taken place, and on the contrary, in some seasons, there has been undoubted evidence, that horses have fed and housed among kine without being affected. But not only do horses generate and produce this epidemic with a true malignant character in his own person, but that he does now also receive it by the medium of affected cattle, there is also full proof. Many of the French veterinary writers not only describe but treat upon this disease very largely, and among other symptoms of putridity, notice the existence of aphthæ or thrush through the mouth, throat, and alimentary canal. There are also other authors among the Italians and Swiss, who mention the existence of this disease also, as being accompanied by phlegmonous tumours similar to the human anthrax, which does not come to suppuration, but mostly terminate in gangrene.

The Symptoms.—Mr. Coleman, professor Blane, and other veterinary writers, say that the malignant epidemic among horses always commences by similar appearances to the mild epidemic. In fact there is every reason to suppose, that it is in many cases only a heightened degree of the common catarrhal affection, pushed into a putrid type by the violence of its action; but at some times we have reason to believe it has raised as a malignant disease only, but fortunately only seldom; but in this kind, in addition to the symptoms accompanying the mild sort, there is purging usually present, and a bloody stinking discharge from the nose and mouth; pulse quick and small; wavering, tottering, and general weakness.

Treatment.—When the common epidemic rages with much violence, still more caution ought to be observed with regard to depletion; but the laxitive medicine never omitted; and so soon as the malignancy makes its appearance the most active means must be employed to support strength, and the stable around kept cool. Vinegar fumigation is

sometimes good. Green meat of all kinds; but a run at grass will always be attended with the most beneficial effects.

Malt and soft mashes is the best stable food, and sometimes nutritious clysters are advisable; and when the weakness is great, and putridity strong and fast approaching, give port wine and ale gruel, and in case of purging or diarrhœa, starch clysters and drenches, and if the following is given two or three times a day so much the better.

Take Sweet spirits of nitre (nitrous æther) 8 drachms,
Mindererius's spirit (liqua ammonia acetatis,) . . . . . 4 ounces,
Camomile infusion or powdered, . 6 do.
Beer yeast, or beer alone, . . 6 do.
Tinct. opii. . . . 3 drachms.
Mix.

To this may be added in cases of necessity, two ounces of oak or willow bark.

RECENT ACCOUNT OF CASES IN AND ABOUT THE CITY OF PHILADELPHIA.

The cases in and about the city, from every account that I could collect, have been numerous, and I have this day learnt that it is still prevailing very much about Darby, Chester, and Wilmington. The first first two cases which I was called to were at the paper mills of Lloyd Jones on the old Lancaster road. This gentleman, it appears, had three horses attacked, two old horses and one colt. The first died before I was sent for, and the second before I could get there. This horse, however, was opened by Mr. Jones and myself. The stomach and the intestines were all in a state of inflammation; but the lungs and the heart very much so indeed. Great extravasation of blood had taken place, and from the very high state of inflammation of the pericardium and

the liquor surrounding the heart, together with the heart itself, it was evident to me that the disease had terminated in inflamed lungs from ill ventilated stabling.

The third was a promising young colt rising five years old. He was first attacked by great difficulty of swallowing, attended with a dry husky cough, some fever, and swelling under the throat. This colt stood at the south end of a very ill ventilated stable; but to prevent the former occurrence of inflamed lungs, I had him removed to a well ventilated place; and with the usual medicines, and the good nursing, care, and attention of Mr. Jones himself, this horse was saved. I heard of several more in the neighbourhood, which, for want of a proper knowledge of the disease, were carried off by it.

Two others belonging to Mr. George Bumm, of the brick yards; one was a fine stallion. But I was not called in until by neglect the disease had terminated in inflamed lungs. On seeing the horse I pronounced him a dead one; on feeling the pulse, I found it had risen to 140; and though I entertained no hopes, to please the owner I bled him, applied a very strong blister and several issues under and about the jaws. This horse, it appears, had not laid down for several days and nights, which is always the case in this disease. Before I left the stable I ordered him a bed. The horse laid down, and as I told them so it happened, to rise no more; he died in the night. Neither blister nor issues had taken any effect, which convinced me that gangrene and mortification had already taken place before I was called in.

A few days after a chesnut horse belonging to this man was attacked with the same disease. He came to me immediately, and from the very high state of the pulse and other indications of approaching inflammation, I took from him about five quarts of blood, and while pinning up the neck, the horse being very restless, took up sufficient time to admit of the blood's coagulating, which on examination I found so bad as to warrant my calling the man back (for he

had already proceeded homewards.) I took away the same quantity, which, with my other usual applications, the horse in less than a fortnight went to work. In this case it was the second depletion that saved him.

Mr. Thomas Rotch, of Walnut-street, had a horse attacked with this complaint, but so very slightly that a small dose of physic, and a few alteratives soon brought the horse round.* This disease had again made its appearance on the Lancaster line; but I was not called in. I however understood that my former system was strictly adhered to by the direction of Mr. J. Tomlinson; and I believe the whole of the horses attacked got pretty well through it.

Mr. Coleman Fisher, of this city, in Chesnut-street, had several horses attacked in his stable in town, as well as on his farm; the whole of which, by his own good care, management, attention, and nursing, he got them all through it. Mr. Fisher, in the whole of these cases, was his own doctor, occasionally consulting me as physician.

Mayor Wharton, of the city of Philadelphia, had two very fine colts attacked with this complaint. They both suffered very much. The running at the nose was very profuse and fœtid; and in the youngest colt was evidently attended with some danger. I was taken very ill at the time, and could not attend, which induced the mayor to pay strict attention to them himself, and by repeatedly consulting me, together with his own good nursing, and strict and regular application of my medicines, which when the horses were in their convalescent state, had joined to them arsenic, which was admi-

* It should be remembered that when ever a horse severely attacked with inflamed lungs once begins to lay down, rises again, and seems refreshed from having done that, it is always the most favourable omen that the disease has taken another turn, and with only common care may be saved; but when a horse who has been attacked some time, and nothing done for him, and on being called in, as in Mr. Bumm's case, and the pulse very high and very strong, once lays down, he never rises again.

nistered with the mayor's own hands, both horses recovered, and are doing well.

CIRCUMSTANCES AND PARTICULARS RELATIVE TO MR. WATSON'S GRAY MARE.

Being an interesting case, was visited by several gentlemen of this city.

On or about the 10th of June a celebrated gray mare, seven years old, owned by Mr. C. Watson, of this city, was attacked with an inflammatory anasarcous swelling of the legs, with some cough and a running at the nose. Being requested by Mr. Watson to examine and attend her, I found the mare with her head hanging in the manger, standing wide, and apparently labouring under great debility. The jaws were somewhat swelled, with a running of both nostrils; pulse about 80. Taking all the symptoms into consideration, and from every inquiry I could collect from his groom, I found the mare was attacked with the prevalent complaint called the influenza, though I at first took it for inflamed lungs; but the groom informing me she laid down every night, convinced me it could not be that complaint. The mare's legs were considerably swelled, with various blotches in and about the buttock, and so much so as to cause me for some time to hesitate what the attack really could be. However the mare was labouring under great depression of spirits, refused her food, and laboured very irregularly at her flank, which, together with the state of the pulse, warranted venesection. I took from her five quarts of blood; and as her eyes and nostrils were very much inflamed, I opened both angular veins of the face under the eye, which I also scarified, to relieve the inflammation. I then gave her a strong cathartic, which had

the desired effect in keeping her body open for near two days. The pulse, neither from the operation of the physic, nor the quantity of blood taken before, had in the least diminished, which induced me to take away near the same quantity. The swelling in her legs had not abated but rather increased as high up as her abdomen; I accordingly rubbed in a strong blister all over her belly, and under the maxillary jaw, all down the windpipe to the chest, which had little or no effect, which somewhat alarmed me, and caused me to think gangrene had commenced. The following powders, with half an ounce of nitre in her water, was given every night and morning.

℞ Emetic tartar, ℥iij
Arsenic, , . ℥i ss.

Mix and divide into twenty-four doses.

I now thought it advisable to have her turned out, which was accordingly done. She eat grass with great avidity; but the swelling did not subside. I then administered the following draught.

℞ Mindererius's spirit, ... ℥iiij,
Spirit sweet nitre, ... ℥ss,
Oxymel squills, ... ℥iiij,
Strong decoction of camomile, . . . ℥viij,
Digitalis, ... ℥ij,

Mixed in some yeast and beer, and gruel for a drink.

The mare was now continued out at pasture, and the powders and nitre continued. The swelling now began to show some symptoms of removal, and settled itself in her head and neck. The nostrils much inflamed and somewhat ulcerated; I therefore rubbed in a strong blister all over her head, jaws, and neck, which had an excellent effect, and in about fifteen days from the commencement of her attack she was returned in a convalescent state to Mr. Watson's stable.

Philadelphia, June 25, 1818. J. C. V. S.

OF THE

VETERINARY PHARMACOPÆIA,

OR

INSTRUCTIONS

FOR

Compounding Horse Medicines;

AND

Preparing the Various Substances employed in Veterinary Practice at the different Veterinary Colleges of

EUROPE AND BRITISH INDIA:

WITH

A LARGE COLLECTION OF VALUABLE RECEIPTS, OF ESTABLISHED EFFICACY, TRIED ON CONDEMNED ANIMALS AT THOSE INSTITUTIONS.

BY JAMES CARVER,

Professor of Veterinary Medicine, and Corresponding Member of the Veterinary Medical Society of London and British India.

On Horse Balls.

Horse Balls are the most common, and generally the most convenient form in which medicines are given to horses. In giving a ball, where the balling iron (an instrument used by the common farrier) is not used, the tongue should be drawn out first by the right hand, and then laid hold of, over-handed, by the left, and so drawn over the grinders, on the left, or off-side. The giving of a ball is a forcible operation; and when necessary for a ball to be repeated very often, it may be dissolved in some gruel, and given as a drink. The most convenient mode of giving a ball is, to back the horse in a stall, and do as directed above: laying hold of the ball in the fingers of the right hand, which must be squeezed into as small a space as possible; the ball must be passed up the roof of the mouth, and left on the root of the tongue. The hand may then be withdrawn, and the tongue liberated, which will have the effect of throwing the ball further back on the œsophagus, or valve of the epiglotis, or gullet, when the ball will pass down. The head should be but moderately elevated, or much mischief may occur, in choking the horse. In giving the ball—which, to most horses, may readily be done by one person, but by two it is more convenient—the helper, who should stand on the near, or left side of the horse, should put his thumb between the tusk and grinder of the upper jaw: he should then take his two fore-fingers of his right hand, and place them between the tusk and grinder of the lower jaw; and by pressing the left hand up, and right one down, with the assistance of the operator on the other side, the mouth is considerably and widely opened, quite sufficient to admit of the *right hand and arm* of the person who gives the ball: when the operator has delivered the ball, and at the

same time withdrawn his hand and arm, the signal *let go* is given; and the person who assists lets go at the same time that the operator does the tongue. The ball, if properly placed, is then swallowed by the horse.*

A horse ball should never be too large, nor too hard. The size of a pullet's egg, only rather longer, is quite sufficient: they should never be larger.

Before I left the Veterinary College, Mr. Long, of High Holborn, London, invented a very ingenious instrument for giving balls, which, for the small class of horses, such as poneys, galloways, &c. is very convenient for horses with a small mouth. They are rather an expensive instrument; and it may be a long time before they come into use in this country. A person desirous of learning how to deliver a ball, may learn it in a few hours, if so disposed; by making up a few balls, of common bread dough, and practising on a few horses with wide and open gullets. This method will soon give him confidence: a few trials will, of course, make him expert.

There are some circumstances in the preparation of horse medicines not sufficiently attended to. Balls, by keeping, become hard, and are liable to stick in the gullet, and endanger life; and when composed of camphor, ammonia, or any of the essential oils, their virtues evaporate: they should, therefore, be made as wanted.

When a ball is composed of a very stimulating ingredient, such as corrosive sublimate, arsenic, and many others too numerous to enumerate, a little drink, such as gruel, &c. should be prepared, to prevent a too strong and hasty action on the stomach. All kinds of oils should be given with the greatest caution and patience, and well mixed with good palatable gruel, to prevent its disagreeable effects on the taste of the animal; for I know of no medicine that is administered to a

* If the horse should cough the ball up, it must be again rolled up in a fresh piece of paper and re-administered.

horse that he takes with more reluctance than oil, particularly if bitter or rancid. I have, during my practice, known horses after a quart of oil has been given them, to have been so disgusted with its taste, as not to permit a man to come near them for a week. The best mode of preparing and keeping for use horse medicines, is to have the mixture made, and put into a jar covered over, for use, with a bladder.

Barbadoes Aloes.

(See ALOES.)

Balsams.

Of the balsams used in Veterinary medicine, there are a variety which are more or less used under the following heads, viz.

Balsam of *Sulphur.*	Balsam of *Capeva.*
Balsam of *Gilead.*	Balsam of *Tolu.*
Canada *Balsam.*	Balsam of *Peru.*

Balsams are generally fluid, and of various degrees of thickness, united with the extractive matter of the various plants they are obtained from: they are occasionally used in Veterinary medicines. The balsam of Canada is a very pure kind of turpentine, though rather expensive for Veterinary practice. It is, however, an excellent diuretic in the dose of one ounce or more. The Venus turpentine is, I believe, equally efficacious, and much cheaper. The balsam of sulphur has been most in use among farmers and farriers, and considered by them as an expectorant very highly improper, though useful in chronic cough.

Barrilla,

Is a sea plant; from the ashes of which the mineral alkali, or soda, is obtained in an impure state.

Barbadoes Tar,

Is a bituminous tar substance, brought from the island of Barbadoes: It is very nearly the same colour and consistence of common tar; but its colour approaches more to a brown, and possesses a diuretic quality. Farriers use it indiscriminately, and thereby do much mischief. At some of the colleges it is more highly valued as an internal medicine for coughs. In obstinate chronic coughs, I have experienced its good effects, when joined with expectorants, and alteratives, particularly of the mercurial kind.

Barks,

In the human subject, is used as a tonic; and though by some Veterinarians not thought to possess the same effects on the horse, I have uniformly administered it under various forms, with very good effect. In fine, all the barks which constitute the Veterinarian's list of medicaments, act with an astringent property. In fine, the barks of this country are, for many veterinary purposes, invaluable; and I believe I should not overrate their virtues to say that many of them are considerably more valuable than the Peruvian, or any of the barks used in common on the human subject. For instance, the *oak*, the *elm*, the *quassia*, the *sumach*, the *persimmon*, and many others too numerous to mention, the common growth of our own woods, which I consider as invaluable to the prac-

tice of the Veterinary Surgeon and Physician; possessing all the tonic qualities internally administered, as well as the astringent qualities, when externally applied, and not near so expensive. I have both seen and experienced the wonderful effects of many of these barks, both externally as well as internally applied, in *gangrene*, in diabetes—*diarrhœa:* and when mixed with *opium*, *ginger*, *ammonia*, and other medicines known to the Veterinarian, may be very usefully applied. In cases of debility, where the discharge of matter is copious, arising from large suppurations, I have used it very successfully. The dose is from one to six ounces, according to the different strengths and tannin qualities or principles of the bark used.

All these barks may be usefully applied in diseases among horned cattle.

Basilicon.

(CERATUM RESINEÆ.)

The yellow basilicon, the white basilicon, the warm stimulating basilicon, the black basilicon, and many others, are used in Veterinary practice, for dressing wounds.

Benzoin:

Or what is commonly called Gun Benjamin, is used in Veterinary medicine as a compound tincture in friars balsam, or "in tincture" with aloes.

Blisters,

Are of the greatest importance in Veterinary medicine; no could we succeed in performing many of our cures without

them, though there is both judgment and knowledge required in their use and application.

When blisters are properly made, and free from the caustic ingredients, such as sublimate, and many of the acids used by the common farrier, grooms, &c. there is no danger of destroying the hair; which gives the Veterinarian, who, having a proper knowledge of his ingredient in making of blisters, the power of a frequent application of them when necessary. Blistering is considered the best application for *curbs*, *spavins*, *wind-galls*, and various internal inflammations; and when properly applied in this way, act by a counter irritation, and thereby, particularly on inflamed lungs, very often saves the patient. The substances most used for this purpose are the Spanish flies, which, when properly mixed with other ingredients, makes their action strong or mild, according to the action or disease they may be wanted for.

EUPHORBIUM—a substance sometimes introduced as a substitute for Spanish flies; but, by causing too much irritation, should never be used.

Blisters for general use.

Take of	Pulv. cantharides	6 oz.
	Venice turpentine	3
	Spts. do. do.	3
	Resin	4
	Lard or Palm oil	1 lb.
Take of	Cantharides	1 lb.
	Oil or lard	2
	Oil of turpentine	6 oz.
	Oil of vitriol	2 dr.
	Pul. euphorbium	3 oz.

Mix for a cheap blister.

Strong Blister.

(For Chronic Swellings, or Diseases of the Bones.)

Take of	Pul. Spanish flies	1 oz.
	Oil of turpentine	1-2
	Venice do	1-2
Mix	Resin and lard, each	2

Take of	Oil of Tereb.	1 oz.
	Vitriolic acid	2 dr.
	Lard	4 oz.
	Spanish flies	1

Mix carefully in an open chimney.

Stronger Blister.

Take of	Mercurial oint.	4 oz.
	Spanish flies	1 1-2
	Venice turpentine	4

Lard, quant. suff. to mix.

Take of	Spanish flies	1 oz.
	Barbadoes tar	1
	Oil of thyme	2 dr.
	Mercurial oint.	2 oz.

Mild Blister.

Take of	Lard	1 lb.
	Venice turpentine	6 oz.
	Spanish flies	6 dr.

Mix.

Take of	Cantharides	1 oz.
	Mercurial oint.	1 dr.
	Venice turpentine	4 dr.
	Lard	4 oz.

Mix.

A Liquid or Sweating Blister.

Take of Spanish flies	1 lb.
Oil of turpentine	3 qts.
Olive oil	1
Take of Cantharides	1-2 lb.
Oil of turpentine	5 pts.
Olive oil	3

Mix.

Note.—For the strong blister, when oil, and resin, and vitriol is used, you must first melt the resin and the oil, and afterwards add the turpentine, having previously mixed the vitriol, gradually, with an oz. of water; which must be slowly added to the mass, by a very slow fire for ten minutes; let it cool, and then add the powders. For the liquid blisters, you must steep the flies in the turpentine for two or three weeks; then strain and add the oil.

A Mild Liquid Blister.

Take of Spanish flies	6 dr.
Oil of turpentine	3
Olive oil	1 pt.

Mix.

Take of Spanish flies	3 dr.
Mustard	1 oz.
Spirits of turpentine	3 dr.
Olive oil	1 1-2 pt

Mustard Blisters.

Mix Mustard	8 oz.
Water	quant. suff. to make a paste
Oil of turpentine	3 oz.
Mix Mustard	1 lb.
Oil of turpentine	2 1-2 oz.

Mix the latter with the mustard, after being made into a paste.

Note.—To either of the former you may add of pure ammonia one ounce; to be mixed and rubbed into the part wanted. If the bowels be affected,

as in inflammation of the bowels or intestines, rub it all over the belly with the hand. If the kidnies over the loins, the friction should be continued for some time. The more it is rubbed, the more and sooner will it take effect; sometimes to a considerable degree, which acts by counter-irritation, and greatly diminishes the internal inflammation, and saves the animal's life. These are a most important class of remedies, and are the most effectual applications for removing those swellings and lameness, which are sometimes the consequence of bruises, strains, &c. they should not, however, be applied for lameness, or bruises, or open joint, when the inflammation is very great.

When, however, blisters are used for internal inflammation, this precaution is not necessary.

Horse Beans, Split Peas, &c.

Are used as an article of diet, and are, perhaps, when judiciously mixed with other provender, one of the strongest and best foods we have in use. They are strongly astringent, and are excellent, both for horses and horned cattle in cases of excessive purging.

Blue Vitriol, Blue Stone;

OR,

(VITRIOLATED COPPER) OR CUPRI SULPHAS.

The sulphate of copper is, in Veterinary practice, a valuable tonic. I have used it at the Veterinary college with very beneficial effects, both internally and externally. It is also extremely useful, applied as a mild caustic, and is an excellent application for ulcers of every kind, disposing them to heal, sooner than any other application. The best way of using this article in solution is to pulverize it, and put as much of the powder in a pint of water, as it will dissolve, and boiling water will facilitate its solution. This solution may be used, mixed in this way, or diluted, as circumstances may re-

quire. When used in the powder, it is sprinkled on the sore. Blue Vitriol, as an internal remedy, certainly possesses a tonic power—but it requires caution in its administration. When administered internally it should be begun with small doses of half a drachm in the form of a ball. In cases of broken knees, I have used it at the college, with great success, particularly when applied hot.

Bole Armenian,

Is an argillaceous earth, or red clay, impregnated with iron, and used by the common farrier, as an astringent in diarrhœa, bloody urine, &c.; formerly its qualities were much extolled as a strengthener, both externally and internally applied. It, however, now claims but little attention, except as a colouring matter.

VETERINARY SCIENCE,

IMPORTANT

TO THE

Agricultural Interests of Pennsylvania;

AND THE

UNITED STATES GENERALLY:

Giving an Account of the

ROYAL VETERINARY COLLEGE OF LONDON,

AND

A Similar Establishment now Organizing in this City,

OF

A New Veterinary Forge and Horse Infirmary,

FOR

INSTRUCTING CITY AND COUNTRY SMITHS

In that Important Branch of Domestic Science, called

THE SHOEING ART.

ALSO,

COMPARATIVE SHOEING EXPLAINED;

Descriptive of a Plan for Disseminating this Necessary and Useful branch of Science

THROUGHOUT THE UNITED STATES.

BY J. CARVER, *Veterinary Surgeon.*

To the honourable Judge Peters, Dr. Caldwell, Dr. James, Dr. Cox, Dr. Chapman, Dr. Hewson, General Cadwallader, Roberts Vaux, Reuben Haines, Jeremiah Warder, William Sansom, John Tomlinson, and Dr. Shaw.

GENTLEMEN,

DEEMING you so justly entitled to the first tender of an essay of this sort, from the station many of you hold in public life, and the estimation which all your private characters bear, that whatever presumption there may appear to be, in making it without permission, I flatter myself that I cannot easily be censured for the apparent impropriety of this address.

I cannot forbear offering some remarks respecting the Veterinary profession, independent of the subject of the new Veterinary Forges I am now establishing in this city, with a view of laying the foundation stone for ameliorating the Diseases of Quadrupeds in general, and in order to give encouragement to those who may still feel a want of confidence in not knowing its having assumed the form of a science, and to the public generally, who have hitherto withheld their support, as if it were a derogatory and hopeless profession. There is no art, it may be maintained, so perplexed and difficult, that by human industry and research, steadily and properly exerted, cannot be rendered more clear and practicable; to accomplish this, however, time must be allowed. Having now for some months past commenced practice, and having performed several successful cures in an *epidemic disease*, which made its appearance in this city during last winter; the result of those inquiries being now before you, the progress no doubt will be more rapid, and its service to the horse and to mankind will assuredly be felt.

Some disappointment has, without doubt, arisen, from unfounded expectations of relief in desperate and hopeless cases, where human art could not avail; and some, not finding their interest served in this respect, have become rancorous enemies to the establishment of the New Forges, as well as to the profession. "The *fruit* has been sought before the *blossom* was unfolded." Still there can be no doubt, that if human medicine and surgery have been aided by public establishments, the Veterinary art must admit of improvement by the same means; and that cloud of *imbecility* that has so long *obscured and stigmatized* the profession in this country,

now promises gradually to be dispelled; and no doubt that in a few years, there will not be a city, a town, or a country village in the United States, but will have to boast a practitioner, whose abilities may do honour to a great national institution; and if any exertions on my part, as a fellow citizen, should have been devoted to obtain this useful and desirable end, I feel already the pleasing consolation that I shall die happy, in having done my duty.

I cannot, however, conclude, without the satisfaction of recording the many marks of friendship and assistance shown to me by Jeremiah Warder, Reuben Haines, the late Dr. Rush, General Cadwallader, Judge Peters, and others, on the entrance of my professional studies, at my departure for the Veterinary College. The services of these friends, with pleasure I acknowledge, have been most gratifying to me.

I cannot, at the same time, fail to mention the friendly assistance of Messrs. G. Morrison, Wurts, and Ely, of Boston, and others of this city, for their friendly aid, while at college, at a period when it was most wanted and felt. And not less, also, do I feel indebted to the friendship of Doctors Chapman and Hewson, for their professional and friendly support and cheerful compliance in attending the examination of the death of Mr. Chancellor's horses. Not forgetting my worthy and particular friend Mr. C. Watson, since my return to the city.

I have long foreseen, gentlemen, the innumerable difficulties which still accumulate before me; I feel myself, however, sufficiently bold to encounter them; and although the task which my present situation imposes on me is great, no exertions on my part shall be wanting. Still, to exert every ability to fulfil it, and if the public which now honour me with its confidence, shall continue to encourage this well-meant endeavour to alleviate the sufferings of the *brute creation*, I shall also make every exertion to correspond with their candour, by rendering myself useful in my station.

Some of you, gentlemen, are proprietors of a very considerable stock of cattle; and the many different maladies and disorders, to which the whole species are particularly exposed and subject, and which, consequently, in gratitude, require our friendly aid and assistance: and as this branch of domestic science, called the Veterinary Art, which I have now the honour to profess among you, has stood so preeminently useful in your opinions, I flatter myself that the following sheets will not be an unacceptable token of respect. All I mean by this attempt, is to endeavour to be useful.

I only desire Mr. Pope's rules may be observed:

> "In every work regard the writer's end,
> Not free from fault, nor yet too vain to mend."

And should this imperfect performance; for want of a better, prove commendable to society, by these few hints which I have drawn together, I shall, with pleasing satisfaction, reflect, that I have endeavoured to contribute my mite towards the benefit of mankind, as well as the brute creation.

I have the honour to be,

Gentlemen, your respectful

And obedient servant,

J. CARVER.

Philadelphia, August, 1778.

CITIES,
COUNTRY TOWNS, AND VILLAGES,
AND
PROPRIETORS
OF
Mail and Stage Coach Establishments,

Will find it an object of great commercial, as well as domestic importance to their own interests in obtaining smiths, and inviting them to receive instruction, and to establish themselves on their different lines. In a political point of view, also this establishment may become of great importance, which must be sufficiently manifest; so fully of late, was the utility of it estimated by the government of England, Ireland, and Scotland, in their *military* and *mail* department, that an annual grant of 15,000*l.* has been voted for the support of the Veterinary College, and for the education of pupils for the improvement of the shoeing art.

Proprietors of such establishments will therefore find it their interest to consult Dr. Carver, or the following gentlemen.

Happily for the profession itself, and much more happily for the community at large, that similar advantages are beginning to make some progress by the aforesaid establishment; and it is to be hoped that the time is not far distant, when it will be further honoured by a legislative contribution, under which predictive ray of reformation, part of the present generation may probably not only derive future advantage, but live to see the former system rescued from the ignorance and barbarity, by which it has long been disgraced in this part of the world. The following gentlemen, therefore, seeing the ignorance and incompetency of farriers, and others, who have hitherto practised on the diseases of horses in this city, (and to remedy this, and meet the *evil*, in the most effectual manner), have cheerfully stepped forward to sanction and support it.

The medical patrons are,

Dr. CHAPMAN, Professor of Anatomy, M. M.
Dr. HEWSON, Professor of Comparative Anatomy.

The patrons friendly to Dr. Carver's New Establishment are,

John Tomlinson,
Mr. Morrison,
Charles Watson,
Mr. Schlatter,
Condy Raguet,
John Vaughan,
W. Wurts,
M. Wurts,
Roberts Vaux;
Reuben Haines,
Jeremiah Warder,
William Sansom,
Dr. Mease,
Alexander Henry,
Wilson Hunt.

To whom proprietors of the above-mentioned establishments, city or country smiths may apply for an introduction to Dr. Carver, and who, on receiving the same, shall be supplied with models of all the patent college Shoes, Hammers, Countersink Nails, Punches, Fullers, Instruments, and Drawing Knives, &c. The Butteris must be abolished for the use of the Drawing Knife, and smiths being instructed in the use of that instrument, by Dr. Carver, will be entitled to shoe, on the above principle, for no less than two dollars a set. Every gentleman travelling to different parts of the United States, and desirous of giving encouragement to the establishment for disseminating this useful and necessary branch of domestic science, will be entitled to a set of the Model Patent Shoes; and on bringing his horse or horses, to the forge for examination by Dr. Carver, he will be instructed in their use and application.

Country smiths, respectable young men desirous of emulating in this branch of the Veterinary Art, as well as to learn the surgical, operative parts of the profession, will do well to apply before the ensuing winter. And every person being so instructed, and found qualified, will receive a proper certificate, signed by the medical patrons, gentlemen and professor of the aforesaid establishment, as being better qualified to practise with advantage to themselves and to the public.

Note.—Dr. Carver being a member of the London Veterinary Medical Society, and having been instructed in the art of compounding Veterinary Medicine at the College *Pharmacopœia*, has also established a small Laboratory at his own house, where gentlemen, travelling to the different parts of the United States, may be supplied with what Medicines they may want. City and country druggists, desirous of retailing, an arrangement of the above ready prepared Medicines, may be supplied also. Each article containing a regular practical treatise on the complaint intended to be removed.

SUBJECTS

WHICH WILL BE TAUGHT AND DEMONSTRATED

TO EVERY SMITH,

ON RECEIVING INSTRUCTION

AT THE NEW VETERINARY FORGE.

1. An Introductory Lecture, giving a general view of the nature of the Shoeing Art.

2. The views commonly entertained of the Shoeing Art, and causes of its defects by various characters, *supposed* to have a knowledge of these things.

3. Reasonings founded on the natural foot, but are irrelevant on the foot being shod.

4. Various principles of shoeing, as they are called, examined. Good and bad shoeing pointed out.

5. One principle only—to follow Nature as near as we can; that defined, and how to be obtained.

6 Fitting shoes, and driving nails, discretional circumstances only pointed out.

7 The difference of the foot after shoeing observed, with a series of nine years experiments, for accurately ascertaining the effects of the shoe after being shod; by B. Clarke, F.L.S. and V.S.

8. A variety of different experiments on the foot of the living horse, explained, during my residence at the College.

9. A description of the foot and hoof of the horse, in which their true nature is endeavoured to be established, not merely as a defence for the foot, but as a non-resisting machinery for the exertions of the animal, and repose of the weight, pointed out and explained.

10. Of the heels; apparent offices of the heels, as elastic beds for the weight of the animal, explained and pointed out.

11. The extraordinary state of the foal's foot, which does not obtain its full development until the fifth year, explained and pointed out.

12. How the weight is received and distributed over the basis of the foot. exhibited, explained, and pointed out.

13. Wall of the foot described; its curious termination in the centre of the foot; explained and pointed out by dissection. The bars, as elastic processes, also defined.

14. Of the frog; how a space in the foot is provided for it by nature, as the elastic key-stone of the foot, demonstrated by dissection. Also the cleft of the frog, and the frog-stay described.

15. Cushion of the frog and its uses, described and demonstrated by dissection.

16. An extraordinary hitherto undescribed part, the conoary frog band, pointed out by dissection.

17. The frog-stay, described by dissection; the rupture of that organ described and pointed out as the real cause of running thrush, by B. Clark, V. S.

18. The frog shown to possess the power of maintaining its own figure, and the curious doctrine of shoeing-smiths, in this respect, pointed out.

19. Their reasons for cutting the frog explained, and the remarkable interruption to the growth of it, from that cause, pointed out.

20. How ascertained; its causes suggested; and the cutting of it unnecessary, nearly in all cases. The frequent cause of ragged frogs pointed out for the above cause. The natural full grown frog never ragged, if never cut, pointed out.

21. The singular effect of shoeing on the frog described; with its natural exfoliations, considered and explained.

22. The different degrees of pressure the frog ought to receive when in health, and when in a state of disease, pointed out.

23. The sole; its singular mechanism exhibited by dissection.

24. Thickens by shoeing, and the wall also retarded and disturbed in its growth by shoeing, explained.

25. The horny and sensible lamina described, by dissection. Five hundred of the former surrounding the anterior surface of the wall, with five hundred of the latter plates of horn surrounding the posterior surface of the coffin bone, and coming in contact with each other, is shown to support the whole weight of the animal, proved by experiments at the Veterinary College.

26. The bearings of the natural hoof on the ground—its natural exfoliations, &c. pointed out—its natural form at five years old; as broad from heel to heel as from heel to toe, also explained—never of an oblong form in a state of nature, if never shod.

27. On standing in the stable—how it proves the entire destruction of the foot, for want of proper stable treatment and management.

28. On shoeing—on neat shoeing—on levelling the toe—on expanding of feet—how to be obtained; together with a closer examination of the na-

ture of these things, pointed out and explained;—how and why the shoeing art has for so many ages been involved in a cloud of darkness. With conclusions how this branch of the Veterinary Art may be drawn from contempt to respectability.

Note.—The great evils produced by cutting, its causes and its remedies, together with a number of experiments on different horses, tried at the Veterinary College, explained and pointed out.

Dr. Carver deeming it of great importance to rectify and determine the weight of the shoe, recommends the following to the notice of the public.

It is a matter of astonishment to see some horses with shoes weighing each 3, 4, and 5 lbs., making together a burden of 12, 16, and 20 lbs. of iron attached to their four feet. It must be obvious to common sense, that such an additional weight, fixed to the extremities of the leg, must be productive of some inconvenience or other, by compelling the muscles and ligaments to greater exertion than necessary; beside other evil consequences, as the weight forcing out the nails, and thereby spoiling the texture of the crust, &c. Why then, we may ask, do not the shoeing smiths, who are daily impressed of these evils, and who are themselves the very authors of them, apply themselves to the correction of their own errors? The answer, I fear, is obvious; because *he who is uneducated*, and *destitute of sound principles* in his art, cannot turn to real profit the experience he has acquired, nor abandon the force of prejudice and custom in which he has so long journeyed; but satisfies himself to imitate and repeat only whatever he has seen or heard by others.

The weight of the shoes proposed by Dr. C. are as follow:

1. For wagon, cart, or dray horses, from	2 lbs. to 2 lbs. 12 oz.
2. For small horses of this kind, from	1 lb. to 2 lbs.
3. For largest size coach horses, from	1 lb. to 1 lb. 12 oz.
4. The small size do. do. from	14 oz. to 1 lb. 4 oz.
5. For large saddle horses, from	1 lb. to 1 lb. 4 oz.
6. For small size do. from	12 oz. to 1 lb.
7. For race horses, from	3 to 5 oz.

Dr. Carver's reasons for reducing the weight of shoes, as above stated, are as follow:

If a horse can be made to travel as safe, and as long, with a light shoe, of only a few ounces, why should pounds be added? By reducing the superfluous breadth of shoes, their thickness may be increased without making any addition to their weight.

I am, however, of the following opinion: that from the race horse to the cart horse, the same system of shoeing should be observed. The *size*, *thickness*, and *weight* of them *only*, should differ. The shoe of a race horse must, of course, be lighter than that of a saddle horse; a saddle horse lighter than that of a coach or bat horse; and these last, more so than that of a cart, wagon, or artillery horse. Shoes have, until lately, in almost every country, been made too heavy; but if the iron be good, and *well hammer-hardened*, until cold—a pound of iron worked in this way may be converted into half a pound of steel, and still answer all the purposes intended.

By adopting these few rules here laid down, you will, at least, avoid the grosser errors which are every day committed; and if you have sufficient courage to study a little more the necessity of acquiring the two principles of shoeing, by asking for advice and information from me, instead of being bigotted to the opinions of your stable friends, Tom, Dick, and Harry, who cannot possibly know any more about it than yourselves, public opinion will soon place you on a level with men who are enlightened, and therefore useful to society. I will observe upon the whole, that the less substance you take away from the natural defence of the foot, *but on particular occasions which may require it*, the less artificial defence will be necessary; therefore, the nearer you follow these few simple rules, the nearer will you all approach to perfection in an *art*, *which has*, *for so many ages*, *been involved in darkness*.

ADVERTISEMENT

TO THE

Faculty, Gentlemen, Farmers, and Graziers

OF

PENNSYLVANIA,

AND THE

UNITED STATES IN GENERAL.

THE branch of science which I have now the honour to profess in this department of natural knowledge, being altogether new in this country, and the *name* by which it is called being but little known, it becomes indispensable, therefore, to communicate, for the better information of the public, whatever may be learned on this head.

Farriery is a name which is derived from the occupation of those who practised it—who were in general *smiths*, or *workers in iron* (*Ferracius.*) *Veterinary* is a word derived from the Latin—Veterinarius, a term appropriated to express either that part of medicine which regards the cure of animals, or the persons who practise that cure. What the true *etymon* of the word may be, is a question of some philological intricacy, though but of little importance. It is sufficient here to say, that the word Veterinarius, as used by Columella and Vegetius, signifies a practitioner in one particular part of medicine, namely, that which respects the cure of diseased cattle; and that art, Veterinaria, signifies the art of healing applied to the healing of cattle.

The word hippiatric, is a compound term, formed of the Greek word Hippos, a horse; and cutrace, medicine, which treats of the cure of diseased horses, in particular; and constitutes a principal branch of that division of medicine which treats of the diseases incident to cattle in general, and to all other domestic animals.

We have undoubted evidence that the art was cultivated in *very early times.* In the infancy of medicine, when the art of healing was confined to the rude elements of surgery, it was indiscrimately applied to the relief of all accidental distresses to which the animal frame was liable, whether

they occurred in man, or in those animals which constituted his wealth, or were the associates of his labours. In these times many things occurred to attach the minds of men to the well being of their cattle.

They were almost solely used for tillage and the dairy; and the life and health of the herds was an especial concern. Cattle was the great medium of exchange, before the invention of coin; and the riches of countries and individuals were estimated by the quantity of cattle, and the laws of religion, which religiously forbade the sacrifice of any animal, but such as were in the most perfect state of health.

Chiron, the Thessalian, a person whom antiquity held in extreme veneration, and who, from his transcendent skill in horsemanship, and many other useful arts, was called the wise Centaur, lived at the age of the Trojan war. This great man descends to us as the father of medicine, and the instructor of Æsculapius in that art. And he was, on the concurrent testimony of antiquity, profoundly skilled therein, as also in the cure and management of cattle.

It would be to no purpose to trace this art minutely through all its vicissitudes; it is sufficient to say, that the decline of the Roman empire, and the decay of arts and sciences, occasioned for some time the destruction of *this* as well as every other branch of knowledge. But while Veterinary Medicine was lost in the *West*, and was declining fast in Greece; it found an asylum among the *Arabians*, a nation, destined, as it should seem, by Providence, to receive in trust the knowledge of Europe, until emerged from the abject state into which it was plunged, it was able to reassume its intellectual rank. It is worthy of remark, that the Asiatics appear to have preserved that part of the management of horses, which consists in their treatment when diseased, entirely separate from the business of the farrier; the confusion of which, essentially distinct occupations, has been hitherto the bane of Veterinary science among us. During a residence of fifteen years among the different nations of the East, I have the satisfaction to say I learnt many useful lessons.

The great lord Bacon, sensible of the services he had rendered to medicine by Zootomy, with a view to comparative anatomy, makes the following observation:

"The diligence of Zootomists," says he, "may much contribute to illustrate the doctrine of Androtomy—and both inform physicians of the true use of the parts of the human body, and help to decide divers anatomical controversies;—farther, it would be no new thing for naturalists, not professedly physicians, to treat of this subject; the naturalist may afford good hints to the practitioners of physic, by trying upon brutes a variety of untried medicaments, or remedies; and by suggesting to him both the events

of such trials, and also what has been already observed about the cure of diseases incident to beasts.

"The most skilful physicians might also, without disparagement to their profession, do it an useful piece of service, if they would be pleased to collect and digest all the experiments and practices of farriers, graziers, butchers, and the like: which the ancients did not despise, but honoured with the title of Hippiatrica and Veterinaria; and among which, if I had leisure, divers things might be taken notice of, which might serve to illustrate this subject."

These are a few of the sentiments of ingenious men, selected of many; but they are sufficient to prove, that from the period at which Veterinary medicine first attracted the notice of the learned, it grew more and more an object of their attention.

I shall now follow the progress of this opinion no farther, but observe, that after a course of many years, the government of France undertook to give effectual assistance and protection to this most useful part of Domestic Science, and to provide for it the same advantages by which medicine had formerly advanced.

It will not be out of place to give here some account of the means which the French government employed, in order to bring about the desirable end; and which so justly entitles France to the same honours, with respect to the Veterinary Art, which the world must ever concede to the school of Salerno, with respect to medicine.

Sensible of the advantages which must result from such an institution, government granted the sum of 50,000 livres to defray the expenses—providing a laboratory, dispensary, physic, guarding-stables to serve as hospitals, forges, instruments, and utensils; also rooms for study and dissection; in a word, every thing that might render the establishment complete.

The first school was opened in January, 1762. It was very soon filled with native students, and in a short time their numbers were increased by foreigners—supported by the empress queen, the kings of Denmark, Sweden, Poland, Prussia, and Sardinia, and the different Swiss cantons. And within these few years past Spain, Portugal, Russia,* and all British India, have followed the example.

The expenses attending this institution, under the ancient government, including the appointment of the director general, professors, and other contingencies, amounted, annually, to the sum of 60,000 livres, or 2,500*l*. The expenses were afterwards reduced by the National Assembly. On the 1st of July, 1790, the school at Alford consisted of the following officers.

* The emperor of Russia has lately sent over twelve Veterinary Surgeons and twenty-four Shoeing Smiths.

Governors.

The comptroller general of the finance.
The intendant of the finance.

Directors and Professors.

Director and inspector general.
Assistant director.
Professor of anatomy and operations.
Professor of materia medica.
Professor of the exterior knowledge of animals, &c.
Professor charged with the care of the hospitals.
Professor of the care of the shoeing forges.
A chaplain and surgeon.
A commanding officer, with his corps.
A commandant in second.
A commissary.

A report was made to the National Assembly by the committee of finance, of the state of the Veterinary Schools; and it appeared from the printed account, that the annual expense of these schools amounted, together, to the sum of 72,000 livres, or 3,000*l.*

In the following detail, the school of Lyons is not included. From the year 1765 to 1782, the annual expense of the Paris school amounted to the sum of 60,000 livres. To this school was attached a patent farm, worth 200,000 livres, or 8,000*l.* To this establishment was decreed,

A director, at . .	11,000 livres.
A coadjutor, performing the function of professor of anatomy, . .	5,000
Three other professors, each, .	2,000
A porter, . . .	300
Anatomical expenses, .	1,200
Expenses attending the museum, .	600
Shoeing forges, . .	1,200
Printing, . .	400
Repairs, . .	3,000
Total, . .	28,000 livres, or 1,166*l.* 16*s.* sterl.

Besides the foreign students, supported by the crowned heads above mentioned, there were several from different countries who studied in

these schools at their own expense; and from every country in Europe, says Mr. Arthur Young, except England.* A strange exception!

Dr. Rush, whose heart was ever warm for the introduction of any new branch of science, which might tend to promote the welfare of the animal creation, conversed much with me on Veterinary subjects, and laboured hard to prevail on me to establish that pursuit in this city—but not having then obtained it scientifically, I proposed to Dr. Rush and other friends, already mentioned, my then intended pursuits at the college,—from whence I am now returned and commenced practice.

* How well does this observation of Mr. Young's now apply to this country! And further strange it is, that the very man who laid the foundation of the London Veterinary College, should be an American, of the Penn family! May we not, therefore, hope, ere long, to see another Penn rise up and lay the foundation stone of a Veterinary Institution in this country?

HISTORY

OF THE

London Royal Veterinary College,

AT ST. PANCRAS.

THE Royal Veterinary College, is an institution first established in the year 1792, at St. Pancras, near London. The public are indebted for this truly national foundation, to the discernment and patriotic exertions of the Agricultural Society of Oldham, in Hampshire. The first professor was Mr. St. Bell, a Frenchman, who had previously signalized himself in this country as a veterinary anatomist, by dissecting the famous horse Eclipse. The college is supported by an annual subscription. The annual contribution is two guineas, but the payment of twenty guineas at once, constitutes a subscriber for life. In some recent instances, the institution has shared the bounty of parliament; an immense saving resulted to the nation from the appointment of Veterinary Surgeons to the different regiments of British cavalry.

The views and objects of the college appear in the following statement, printed by the authority of the governors. The grand object, they observe, is the improvement of veterinary knowledge, in order to remedy the ignorance and incompetency of farriers, so long and so universally complained of. For this end, a range of stables, a forge, a theatre for dissections and lectures, with other buildings, have been erected; a gentleman of superior abilities has been appointed professor, with other requisite officers. The anatomical structure of quadrupeds, as horses, cattle, sheep, dogs, &c. the diseases to which they are subject, and the remedies proper to be applied, are to be investigated and regularly taught, by which means enlightened practitioners of liberal education, whose whole study has been devoted to the veterinary art in all its branches, may be gradually dispersed over the kingdom, on whose skill and experience confidence may securely be placed.

Pupils to the college, in addition to the lectures and instructions of the professors, and the practice of the stables, at present enjoy (from the liberality of some of the most eminent of the faculty) the advantages of free admission to their medical and anatomical lectures. These pupils, previ-

ous to leaving the college, are strictly examined by a medical committee, from whom they receive a proper certificate; and upwards of five hundred have been examined and approved, left the college, and are at this time practising in the different regiments of cavalry, and various parts of the country, with great success.

Subscribers have the privilege of sending their diseased animals to the college, without farther expense than that of daily food, and these in general form a sufficient number of patients for the practice of the professor and pupils. On fixed days, the professor prescribes for the animals belonging to the subscribers, who find it inconvenient to send them from home, provided the necessary medicines be furnished and compounded at the college. Subscribers' horses are there shod at the ordinary prices. His royal highness the commander in chief having been pleased to appoint a board of general officers to take into consideration the objects of this institution, and they have reported the continental loss to be very heavy, from the total ignorance of those who hitherto had the veterinary department in the army. This report his majesty approved, and henceforward to qualify for the military service, a veterinary surgeon must be provided with a regular diploma from the college. A number of gentlemen subscribers to the institution, attend once a fortnight to inspect the discipline of the stables, and see that the regulations are duly complied with.

THE PATRONS OF

THE ROYAL VETERINARY COLLEGE

ARE AS FOLLOW, VIZ.

His Royal Highness PRINCE REGENT, President.

His Grace the DUKE OF NORTHUMBERLAND, K.G., F.R.S., F.A.S.

Vice Presidents.

LORD PERCY,
GEORGE, Earl of Morton, F.R.S., F.A.S.
GEORGE, Earl of Pembroke,
PHILIP, Earl of Chesterfield, F.R.S.
GEORGE, Earl of Macclesfield,
His Royal Highness DUKE OF KENT,
GEORGE, Earl of Warwick,
Sir T. C. BUNBURY, Bart., M.P.

GEORGE HOME SUMNER, Esq., M.P.
THOMAS PELL, Esq., F.A.S.
GRANVILLE PENN, Esq. F.A.S.

Note.—This last mentioned gentleman is of the Penn family of Pennsylvania, and is now living in England. He was the friend and patron of Mr. Charles Vial De St. Bell, the first professor of veterinary college; a great promoter of veterinary science, and the gentleman who laid the foundation stone of that institution.

The following gentlemen originally constituted the committee of examiners, for the purpose of granting diplomas to the pupils of the college, when sufficiently qualified to engage in practice.

DR. JOHN HUNTER,
G. FORDYCE,
BAILLIE,
BABBINGTON,
MR. ABERNETHY,
MR. HOULSTON,
CLINE,
A. COOPER,
HOME.

The present Examining Committee are,

H. CLINE, F.R.S., President,
Dr. BABBINGTON, F.R.S.
Dr. BAILLIE, F.R.S.
Sir EVERARD HOME, F.R.S.
J. ABERNETHY, Esq., F.R.S.
A. P. COOPER, Esq., F.R.S.
Dr. COOK,
Dr. PEARSON,
Dr. WILSON, F.R.S.
A. CLINE, Esq.
EDWARD COLEMAN, Professor,
WM. SEWELL, Esq. Assistant Professor,
Treasurer and Secretary.

Among the improvements of these latter times, the extension of a regularly cultivated system of veterinary practice, and the attempts to rescue the superior class of domestic animals from the torturing hand of presump-

tuous ignorance, are not the least considerable, either in the view of humanity or life.

It is true, that during the various ages which have passed since the days of Columella, the number of writers treating on veterinary science, according to the best medical light which the time afforded has been considerable; but these works had never any very extensive circulation. Competent practitioners were wanting to put their precepts in force; and diseased animals were either totally neglected, or confided to the unmeaning and capricious efforts of the illiterate vulgar. Entirely to wipe away this opprobrium on humanity and common sense, must infinitely redound to the credit of the present times; and it is consoling to be able to announce, that attempts are daily making towards that beneficent end, by considerate and philanthropic characters in various parts of our own and neighbouring country.

Ancient prescriptions, and a false pride, among the medical faculty, compose the twofold cause which has hitherto deprived our domestic animals of the benefits and comforts of regular assistance. Cattle have always been doctored in every country, either by their attendants, or by men pretty nearly on a level with those, in point of education, who, on the strength of having learned to perform the most simple and common operation, and from the want of able proficients, have undertaken the arduous task of prescribing medicine. We need not wonder, that in former times such professors were held duly qualified, since men impartially committed their own persons to the hands of ignorant barber surgeons; and since so many absurdities of equal magnitude subsisted, which, like spectres and ghosts, have vanished at the approach of modern light. But it may well be thought surprizing, that in this discerning age, when a liberal education is universally acknowledged to be absolutely necessary to the acquisition of medical science, that an illiterate farrier should be trusted in the cure of diseases. Precisely the same studies, physiological, anatomical, and medical, are requisite for the veterinarian as the human practitioner. The animal economy, in its manifold relations, is generally fundamentally the same in men and beasts, and governed by the same laws; the same materia medica is, in a great degree, applicable to both. But the greatest skill is requisite to form a judgment of the symptoms of diseases in brutes, from their inability to describe their own feelings, and the consequent uncertainty of their pathology.

Can there be a greater burlesque, than the supposition of a man's ability to prescribe physic for a horse, merely because he knows how to groom and shoe him? or might we not also, with equal reason, employ our own shoemaker to take measure of our health? The plea of experience is futile, from the utter inability (prima facie) of illiterate and uninformed men to investigate

the principles of science, and their total want of opportunity to acquire, by rote, a rational system of practice. The whole stock of medical knowledge of these practitioners, usually consists in a certain number of receipts, derived from their masters or fathers, and which they continually ring the changes, in all cases, right or wrong; and so fiercely are they bigoted to their own peculiar nostrums, that they are totally incapable of all advice or improvement—the common and unavoidable fate of confirmed ignorance; since it is the highest point of knowledge to know that we still need information. They sometimes cure by luck, seldom from knowledge, but often kill by regularly adapted process. How often has the miserable patient's shoulder been pegg'd, and blown, and bored, by way of punishment, for the folly of getting himself strained in the back sinews of the leg, or coffin joint! How many pleuretic horses have been killed outright by ardent spicy drenches, which probably might have cured the cholic! How many have been rendered incurably lame, from the patent shoe being affixed to the wrong foot!—Let not the reader suppose these to be mere flourishes, applied to the generality of farriers within my knowledge: I aver them, on the experience of many years, to be literal truths; and by the tenor of them, he may judge of the majority of that faculty throughout Europe. Into such hands do we commit our distempered animals, which have it not in their power to reproach us with their accumulated sufferings; mankind from prejudice, indolence, or want of feeling, neglecting those creatures which they can purchase with their money.

It has been supposed that veterinary writers have been wanting. It was many years ago discovered in France, that the best remedy for this defect, and the only adequate method for the general diffusion of veterinary knowledge, and the rearing of a sufficient number of persons properly qualified in that line, would be to erect public seminaries expressly dedicated to the purpose.

We, of this country, came (late indeed), into the same salutary measures; and a Veterinary College, as an hospital for cattle, has been established in London, and others in various parts of the kingdom. The propriety of these steps, and the benefits derived from them, must be obvious in the extension of veterinary knowledge and the increase of practitioners.

Public institutions, provided they are not unduly favoured with exclusive privileges, or armed with coercive and restrictive powers, are ever most efficacious and contributory to the advancement of science. The scattered rays of knowledge are, by joint and public means, best collected into a common focus or centre; whence they are, with more ease and expedition, diffused and circulated throughout the whole body of the commonwealth. The Veterinary College has also adopted a very judicious

method of disseminating the true principles of shoeing, by erecting forges in different quarters of the metropolis, where all persons may at any time have their horses shod at the common price charged to subscribers. Prejudice, I know, on more important occasions, has often been trumpeted forth as not only harmless, but beneficial among men; which indeed would be just, were there any general utility in the continuance of ancient abuses. It is the grand business of philosophy to provide a counterblast for these interested or ingnorant trumpeters.

It has already been asked, for the advocates of our shoeing and sow-gelding doctors, how they came to suppose that less medical knowledge would suffice to prescribe for the brute than for the human animal, who can orally depict his own feelings, and verbally assist the physician in forming a correct judgment of his disease. They seem to act upon the strange supposition, that it is much easier for an illiterate man to penetrate at once, as it were, by INTUITION, into the arcana of the sciences, than for a learned or well informed man to render himself skilful in the nature and management of horses. Can a man be the worse farrier for having learned the necessity of making constant observation of his own, instead of acting by rote, and being guided by a few arbitrary receipts, for knowing the nature of the medicines he prescribes, the anatomy and animal functions of the horse, and for making all such knowledge his study?

In fine, all at this moment appears obscured or bewildered, by the ill-placed confidence of the owners of cattle upon the blacksmith of the parish; upon illiterate and conceited grooms, stupid and listless shepherds; or upon a set of men infinitely more dangerous than all the rest, who, arrogating to themselves the style of doctors, ride about from town to town, and from village to village, distributing their nostrums, compounded of the refuse and vapid scraps of druggists' shops, to the destruction of thousands, whose varied disorders they treat alike, neither consulting nature or art for the cause or the effect. Miserable animal! bereft of speech, thou canst not complain; when, to the disease with which thou art afflicted, excruciating torments, are superadded by the ignorant efforts of such men, who, at first sight, and without any investigation to lead them to the source of thy disorder, pronounce a hackneyed, common-placed opinion on thy case, and then proceed, with all expedition, to open thy veins, lacerate thy flesh, cauterize thy sinews, and drench thy stomach with drugs, adverse in general to the cure they engage to perform.

Opposed to this barbarous and noxious practice, let us turn our eye to that of the Veterinary Physician and Surgeon.

We shall not find him occupying the attention of his auditors with the accounts of miraculous cures he never performed,—or, under the mask of sullen ignorance, endeavouring to attract confidence; we shall not see him

armed at all points with phlemes, rowelling knives, and cauterizing irons, to rack and torment his suffering patients; or with drenches or balls, to obstruct the efforts of nature. We shall see him with a cautious eye and tender hand, surveying and examining, with discretion and judgment, into the case before him; and, as far he can attain information from those who bring the animal to him, we shall find him an anxious and patient inquirer; proceeding to explore all the external signs, and to observe with great minuteness every symptom which presents itself; and if he finds them so complicated that he cannot with certainty proceed to give an opinion, he will wait until some new, or more distinct appearances come to his assistance. If, however, these signs should not show themselves, to give effect, he will then apply to the only resource left him—that of compelling nature to develop herself; or, at least, to show some indications. This he accomplishes through the means of medical aid, administered in proper quantities, which, by increasing more or less sensibly the disease, produces some discovery of its tendency.

Now that witches and ghosts of all kinds are flitting apace off the scenes, it is full time for men to lay aside the expectation of all other uncaused effects. On these topics a celebrated veterinary writer dwells, with peculiar force of illustration, as he says, " from a motive of justice, on account of the irrational prejudice of too many persons concerning the Veterinary College."

" Enjoying a public institution in the metropolis," says he, " where veterinary science, in all its branches, is regularly taught and practised, it remains for those who interest themselves in the safety and well being of our domestic animals, to devise and recommend the most proper and expeditious methods of a general diffusion of these benefits throughout the country. The farriers of London were advised, by persons of influence, to allow their sons and apprentices to attend the college lectures which are given, and which indeed is practised by several of good repute. Those gentlemen of the medical profession, attending the London hospitals, whose destination is for country practice, will surely perceive great probable advantage in the acquisition of veterinary knowledge, even if they have no present intention to profess that branch of medicine. Business, as is sometimes the case with young practitioners, may run short at the outset, and the leisure time might be both honourably and profitably employed in veterinary practice. Such meritorious and humane occupation, could not possibly injure the medical character of a medical gentleman in these enlightened times; on the contrary, it would be more probable to procure him connexions of the most valuable sort—and might be his passport and introduction to the families of medical men."

Thus far we have stated the opinions of a writer truly ingenious, and most deservedly popular. Just, however, as are the encomiums of this useful institution at an early period of its existence, yet we are bound more especially to acknowledge the extraordinary progress which this institution afterwards made (and is now making) under its present enlightened and truly ingenious professor Mr. Coleman. This gentleman, to a natural taste for these investigations, united a profound knowledge of his profession, as an anatomist and surgeon—a foundation on which the Veterinary Science could not but be erected with singular advantage. That this has actually been the case, our readers must be aware that from the report of 1814, published in London, brought over by Mr. Carver, that not less than six hundred students have passed at this institution, who are now attached to the different regiments of British cavalry, and also practising in various parts of the united kingdom; besides the different articles in which Mr. Coleman's name and writings have necessarily been brought forward; for which reason we close the present article without entering on those particulars which it would, otherwise, have been our indispensable duty to have stated.

THE CHARACTER

OF

A VETERINARY SURGEON,

In a limited sense, is one who practises the operative part of the Veterinary Art, and whose views do not extend to the treatment of constitutional maladies in brute animals.

The veterinary practitioners in general are named Veterinary Surgeons—and this designation also attaches to those who engage in all the branches of the profession, as they are required in the different regiments of cavalry. We shall devote this article particularly to the consideration of those qualifications which every man engaged in it ought to possess, in an equal degree with those whose conduct and operation are exercised on the human body.

There is, undoubtedly, no profession in which greater natural qualifications are required than our own. The more liberal nature has been in her gifts, the more carefully the first impressions have been cultivated by rational education—by so much the better will a man be fitted for the practice of it. *Youth, firmness, dexterity, acute sensation, sound judgment, and humanity*, are the qualifications which may be considered as necessary for a surgeon, whether his patient be a *man* or a *quadruped*.

Youth.

1st. We will begin by observing—that in youth strong impressions are made on the mind, and that he who begins to study on the brute as well as the human subject, from the earliest period of life, will be most likely to acquire reputation.

Firmness

Is the second qualification of a Veterinary Surgeon, and is indeed extended to the mind as well as the body. It implies resolution to go through his operations, however hazardous or severe, undisturbed by any accidental circumstances—unmoved or unawed by the presence of spectators. It also implies presence of mind to determine how to act under all circumstances.

Dexterity

In using his instruments, is also a necessary qualification in a Veterinary Surgeon. It enables him to finish an operation with all convenient despatch, and with the least pain to the patient, whether brute or human.

Acute Sensation

Is extremely necessary also for a Veterinary Surgeon; for how often do instances occur in the acute diseases of the horse, where the nicest delicacy of the touch is necessary to distinguish the true state of the pulse.

Sound Judgment

Is, on many accounts, of the utmost importance to the Veterinarian. It enables him to form judicious prognostics, by which he may calculate the chances for or against the event of any operation proposed. It is often not less useful in deciding for the patient's possible advantage, than in preserving his own reputation, and keeping up the credit of his art.

It also teaches him to determine with precision the time necessary for performing an operation, leads him to the choice of the best methods of executing it, or perhaps furnishes him with the *more laudable* and *happy contrivance* of recovery of his patient by more gentle means.

Humanity

Is the last qualification mentioned as necessary for a Veterinary Surgeon; and though last, not the least important and laudable.

This indeed is the cardinal qualification of all; it reflects a lustre on the rest, and completes the true character of the man, as well as of the surgeon. The exercise of it is required in two ways; first humanity in operation, and secondly, tenderness in our subsequent treatment. Humanity in operating, should induce us to put an end to our patient's sufferings (whether brute or human,) as soon as we can, and also to perform this severe though necessary task after such a manner as shall be attended with the least possible degree of pain, besides, the pleasing satisfaction resulting to ourselves, of having done our duty when actuated by such motives.

Tenderness

In our behaviour for the *brute creation*, needs not an argument to enforce its necessity—it being no less honourable to feel for them than ourselves; and surely the distresses of brute creatures, and the pain we are often obliged to inflict upon them, is sufficient to soften the hardest heart, and

to raise the emotions of compassion within us towards those *mute sufferers* who have toiled in our fields, and lent the labouring hand to help build our *cities* and our churches.

When dressings are either removed or applied, it should be done with a gentle hand, and in a manner which would convince the bystander that it is not the Veterinary Surgeon's intention to give pain, even to the most inferior animal, if he can avoid it; while a contrary conduct to this may ever prove an obstacle to his success in life; for cruelty will increase by habit, and at length render his manners coarse and offensive, even to those on whose liberality the emoluments of his future practice may, in a great measure depend.

We shall now come to consider the *acquired knowledge* necessary to make a good Veterinary Surgeon. On this point we shall make one general observation—to wit, that the more extensive and universal a man's knowledge may be, from having made these his pursuits and acquirements in various quarters of the globe, (and which the writer has had every opportunity of obtaining from early life,) the better fitted will he be for the exercise of his profession. But, not to alarm young persons by considering the subject too extensively, or by a vain display of science, it is necessary here to mention that knowledge which is absolutely necessary they should acquire. If they are as conversant as they ought to be, in the matter proposed to their industry and application in this work, the knowledge they will then have obtained cannot but raise a spirit of inquiry in their minds, which will lead to more important exertions.

The next and most important acquisition is a knowledge of the *power and properties of medicines*. The various substances of the materia medica, the different classes of the *vegetable*, *mineral*, and *animal* kingdoms, so far as they relate to physic, supply all the several applications used in *Veterinary Surgery*. If therefore we are ignorant of the qualities of these substances, we may commit the greatest mistakes in the use of them. Instead of an emollient we may apply an escharotic; and instead of a stimulating application, we may perhaps prescribe a sedative.

Without this knowledge it is impossible to practise our profession with any degree of credit or success; though by some it may possibly be argued that we should have learned these things equally from experience. Nothing, therefore, can be more necessary than a knowledge of the *Materia Medica*, and consequently of *Veterinary Pharmacy*—which is nothing more than a knowledge of the art of mixing and compounding the several articles of the *Veterinary Materia Medica*, so as to produce a combination capable of effecting what cannot be done by any solid or fluid substance *singly*.

The last point to be insisted on, as demanding our particular attention, is the study of anatomy. The body of the *horse*, the *cow*, the *sheep*, and the *dog*, being the subject of our operations, how shall we be able to perform them properly, if we are ignorant of the construction of the machine on which we are to work.

A complete and thorough knowledge of Comparative Anatomy

Is, therefore, absolutely necessary to acquire; and the method to be pursued, in order to acquire this knowledge, must be the work of our own hands, in the *dissecting rooms* of those institutions established for that purpose, in different parts of Europe. Mere oral instruction is not sufficient; we may attend the most ingenious and instructive lectures in anatomy of the *human subject*, without being fitted for the exercise of our profession. It is, therefore, necessary to dissect, to trace, and inspect, the several parts of animals with our own *hands* and *eyes;* and this with care and industry.

Note.—Dr. Carver having experienced much loss of time, as well as inconvenience, in getting the feet of several subscriber's horses in order, owing either to the contradictory orders of the owner, or through the chicanery or artifice of the grooms and coachmen, who, being bigotted in their own absurd notions, are constantly directing and ordering different kinds of shoes, and the mode of applying them, in direct contradiction to all principle, begs to inform them, that until this branch of the Veterinary Art is more generally studied, and better known and understood by gentlemen than it appears to *be by many*, that no such orders can be complied with. Dr. Carver at the same time informs them, that he will cheerfully listen, and pay every attention to the opinion and wishes of every gentleman, to make any alteration that can, consistent with principle, be complied with; and which can always be done, either by a note, or by coming themselves to the forge counting house; but that no orders of a peremptory nature from servants can be attended to.

He has seen and witnessed more systems of shoeing, in all parts of the world, than perhaps any other man of his age, in this or any other country —and to bring feet into a state of health, that has once suffered from disease, is not only a very difficult task, but requires different means, by which it is to be effected; and as those means are best known to the judgment and practical experience of a professional man, proper confidence must be placed in his abilities, in order to enable him to effect it. It is therefore hoped, that gentlemen seeing their own interests concerned in this useful and laudable undertaking, will not be offended at this friendly notice.

On the first establishment of the Veterinary College in England, many evils of this kind soon crept in, which had nearly proved fatal to the establishment; but the *humanity* of the cause, by which thousands of useful animals, which had been, and was still likely to be saved, prompted several of the *faculty*, as well as hundreds of the first characters, to step forward in its defence and preservation; and not only in this way has a great national benefit resulted to the community, but to the brute creation at large.

J. C. V. S.

College Certificates.

Veterinary College, 12th July, 1815.

THESE are to certify, that Mr. J. Carver has attended the Veterinary College as a resident pupil for three years, and having been examined by us, we consider him as qualified to practise the Veterinary Art.

HENRY CLINE, Surgeon,
WILLIAM BABINGTON, M.D.,
ASHLEY COOPER,
J. COOK, M.D.,
G. PEARSON,
HENRY CLUI, Jun.,
EDWARD COLEMAN, Professor,
WM. SEWELL, Assistant Professor and Treasurer.

Theatre of Anatomy, Physiology, Pathology, and Surgery, October. 1815.

By Mr. Wilson, Mr. Charles Bell, and Mr. Brody.

This to certify, that Mr. J. Carver, Veterinary pupil under me, has attended a course of lectures on the human subject, and chymistry, under sir H. Davy, Jun.

EDWARD COLEMAN, President,
WM. SEWELL, Assistant Professor.

Royal Veterinary Medical Society, July 12, 1815.

We hereby certify, that Mr. J. Carver is a member of the London Veterinary Medical Society, and that his observations have contributed to the advancement of Veterinary knowledge.

Signed by order of the Society.

EDWARD COLEMAN,
WM. SEWELL, V. P.

S. DUFFIELD, Secretary.
To Mr. J. Carver, V. S.

Agricultural Society.

The above Veterinary diplomas have been examined and approved by the President, Vice President, Secretary, and Members of the Philadelphia Agricultural Society.

R. VAUX, Secretary.

Understanding that several malicious and ungrounded reports having been in circulation, respecting Dr. Carver, Veterinary Surgeon, having killed a mare of mine, which he never attended, I deem it my duty, as a fellow citizen and patron of the Veterinary science, to contradict any such evil report as may have a tendency to injure the professional talents of a man, whose services I not only estimate, but shall avail myself of, as occasion may require.

JOHN TOMLINSON.

Philadelphia, 5th mo. 16th, 1817

Having attended, at the request of the parties, an investigation of the circumstances which led to the death of Mr. Chancellor's horses, we do certify that nothing came to our knowledge which ought to affect any estimate which might previously have been entertained of the skill and abilities of Mr. Carver as a practitioner of Veterinary Medicine.

N. CHAPMAN, Professor of Anatomy and Mat. Med.
THOS. T. HEWSON, Prof. of Comparative Anatomy.

*** The Students of the University of Pennsylvania are respectfully invited, in the ensuing winter, to attend a Course of Lectures on the Foot of the Living Horse; and the various diseases attendant on Quadrupeds in general.

VETERINARY BATH.

To Private Gentlemen, Owners of Breweries, Proprietors of Mail Stage Establishments, and Livery Stable Keepers, the following Improvement in Veterinary Science, is respectfully submitted.

THE various uses to which Dr. Carver's *Patent Universal Veterinary Medical Bath* may be applied, particularly for restoring the feet of horses that have been injured by constant use on the pavement of a large city, renders it a valuable *desideratum* to the public. The principles of this Bath, and the various medical uses to which it may be applied, in diseases of the feet, such as founder, contraction, and sand-cracks—of the skin—of the lungs—and for inflammation generally; for tetanus, and many other disorders, both external and internal, to which horses and other quadrupeds are liable, makes it of vast importance. It is also recommended as useful in all infirmaries and large establishments, such as breweries, sugar houses, mail stage establishments, private and public stables, &c. To the southward and westward, and in the West Indies, on large and extensive cotton farms, and plantations, where tetanus and other spasmodic disorders so frequently occur among the negroes, the hot and vapour bath will be found extensively useful in saving the life of both man and beast. Dr. Carver, with a view of making its usefulness more general, has simplified his Universal Bath, so as to render it less expensive, as well also to give less trouble and inconvenience to servants.

A model of Dr. Carver's Universal Bath may be seen at his residence; and all applications for the right of using it, together with the Patent Bar Shoe, in aid of the cure of Contraction, will be punctually attended to.

For the above mentioned establishments, the following charges will be made, for patent rights for the term of *fourteen years:*

For all public livery stables,	10 dolls.
Mail stage establishments,	10
Breweries, not exceeding ten horses,	5
Private stables, do. do.	5
Private gentlemen, owning only one horse,	3

All applications for the purchase of patent rights for a town, city or stable, will be punctually attended to.

J. CARVER, *V. S.*

Philadelphia, August, 5, 1816.

HEADS OF SUBJECTS

TO BE TREATED OF IN

DR. CARVER'S PROPOSED PUBLICATIONS.

*** In order that the public may be put in possession of all the necessary information in Veterinary Science, Dr. C. will embrace the earliest opportunity for treating on the various subjects here detailed; selecting for his first publications those which may, at the present time, be considered of the greatest importance to this rising country.

OF THE HORSE.

General management of the Horse, including observations on the Stable; its situation, size, cleanliness, ventilation, temperature, &c.

OF STABLE DUTY.

Arrangement of Stable Duty; bad consequences of its neglect; proper time of doing it, &c.

OF FOOD.

Proper mode of Feeding with different articles, including soft food, farinaceous grains, oats, Indian corn, &c. Consequences of hard food; showing the great advantages that would be derived from the more general introduction of soft food, such as steamed potatoes, carrots, Swedish and Russian turnips, bran, shorts, and particularly bruised corn of every description. On the impropriety of stuffing horses with so much dry hay; with observations on a more politic mode of cutting it for mixing with other food.

ON LABOUR.

Remarks and observations on Labour; and the proper mode of appropriating it among other draught horses and oxen; time in the yoke; choice of cartmen and drivers; with consequences of improper treatment after labour.

ON DISEASES.

Injurious customs of bleeding and physicking horses at particular seasons of the year; including an essay on the use and abuse of purgatives. Prevention of disease, reduced to the heads of Air, Dressing, Feeding, Watering, and Light; with observations on the necessity of Ventilation.

On Diseases of the Liver.—Jaundice.

On Diseases of the Kidneys.—Suppression of the Urine.

Diabetes, and Diseases of the Bladder.—Structure and economy of the Bladder—Inflammation of the Bladder; causes, symptoms, best mode of treatment, and cure; operation, how performed, to draw the water from the Chest, Bladder, &c. Difference of structure in the horse and man; difference of operating. Of Calculi.

Diseases of the Intestines.—Of the Cholic, or Gripes—Diarrhœa, or Looseness. Sleepy and Mad Staggers—Stomach Staggers; its causes, symptoms, and cure.

Of Glanders.—Glanders in the human subject; also in Swine. Comparison between Farcy, Glanders, and the Venereal disease.

Inflammation of the Stomach.—Inflammation of the Lungs—Description of the necessary operations, and how performed in this fatal disease, made simple and easy.

Diseases of the Eye.—Of the Eye, its structure, &c. Of Vision, how performed. Of Opthalmy, Cataract, or Moon Blindness, as so called by farriers. Of Gutta Serena, or Glass Eyes, &c.

OF THE PULSE.

Mode of feeling and judging of the Pulse in different diseases. Of the circulation in general. How to know when to bleed and when not, by the action of the pulse. How to judge of the blood when first drawn, and when coagulated by the action of oxygen or the external air.

ON THE ORGANS OF RESPIRATION.

Of the Trachea, or Windpipe; its structure—Roaring—Broken Wind—Strangles—Catarrh, or Cold—Chronic Cough; its treatment and cure.

OF THE EPIDEMIC DISEASE,

Which has been so prevalent for these two years past in this city, the suburbs, and on the Lancaster line.

ON SWEATING.

A cooling and salutary process in the above and other diseases. How and with what medicines this secretion is to be drawn to the surface of the body, as also by means of Dr. Carver's Patent Medical Vapour Bath.

ON INFLAMMATION, AND TREATMENT OF WOUNDS IN GENERAL.

On Inflamed Veins, and danger from bleeding; how to be treated—The Suppurative process in wounds—Punctured wounds—Wounds of the Joints; great danger attendant on; only one mode of cure, and that explained—Contused and lacerated wounds—Ulcers, Fistula, and Pole Evil; treatment and cure pointed out—Hæmorrhage, or bleeding in general—Sprains.

ON THE FOOT IN GENERAL.

The horny Hoof; its structure and use—The horny and sensible Laminæ; their elastic folds; 500 of each surrounding the horny box; their structure and arrangement—Whilst under inflammation, its treatment and cure—The Coffin Bone—Horny and sensible Sole, their uses—The Frog; its use as an elastic stop to expand the heels explained—Corns, Contraction, Thrush, Canker, Sand-crack, Quittor, &c. &c.; their symptoms, treatment and cure, on a new principle never before introduced in this country, by the author's Patent Veterinary Medical Bath.

ON DISEASES OF THE LEGS.

Best mode of treatment and cure, together with the necessary operations, and how performed.

ON HOBBLES.

Description of the Patent Hobbles, improved by the author, for casting horses without injury, for the performance of the necessary operations.

ON CASTRATION.

College mode of performing it on new principles, and also of operating for Curbs, Bony and Blood Spavins, Thoroughpin, Wind-galls, &c. &c. by actual cautery—together with observations on general and local bleeding.

OF HORSE BALLS, DRINKS, AND CLYSTERS.

How administered, pointing out the danger of giving drink and drenches to horses—not the same effect on horned cattle.

ON OPERATIONS.

Particular directions for performing the most important operations in farriery, such as Firing, Blistering, Rowelling, Bleeding, &c. agreeably to the College mode of practice—(with a plate.)

ON DRAUGHT HORSES.

Best management of draught horses, particularly those used in drays and carts in and about the city of Philadelphia.

ON THE DISEASES

OF

COWS, SHEEP, SWINE, AND DOGS;

With additional Observations on their Diseases, made during my residence at the Veterinary College.

On the Diseases of Cows.

Chapter I.—Inflammatory Fever, or general Inflammation; by the common farrier known by the various names of Quarter Ill, Quarter Evil, Joint Felon, and many others equally absurd and unmeaning.

Chap. II.—Fever, Putrid, Malignant, Epidemic, Murrain, or Pest.

Chap. III.—Catarrh, or Cold, Catarrh Epidemic, Influenza, Distemper, or according to Dr. Clayton, Felon.

Chap. IV.—Inflammation of the Lungs.

Chap. V.—Inflammation of the Stomach.

Chap. VI.—Inflammation of the Bowels.

Chap. VII.—Inflammation of the Liver.

Chap. VIII.—Inflammation of the Kidneys.

Chap. IX.—Inflammation of the Bladder.

Chap. X.—Inflammation of the Womb.

Chap. XI.—Inflammation of the Brain.

Chap. XII.—Fog Sickness, Hoven, or Blown.

Chap. XIII.—Gripes, or Flatulent Cholic.

Chap. XIV.—Indigestion, or Loss of the Cud.

Chap. XV.—Jaundice, or Yellows.

Chap. XVI.—Diarrhœa, Looseness, Scouring, and Rot.

Chap. XVII.—Red Water, or Bloody Urine.

Chap. XVIII.—Dysentery, or Bloody Ray.

Chap. XIX.—On the Management of Cows when near their time of Calving.

Chap. XX.—Inflammation and Swelling of the Udder.

Chap. XXI.—On Wounds, Strains, and Bruises.

Chap. XXII.—On the Parturition of the Cow and Sheep.

On the Diseases of Sheep.

Chapter I.—The Rot, the Foot Rot, the Scab, Red Water, Dysentery, or Braxy, Diarrhœa, or Scouring.

Chap. II.—Inflammatory Fever, General Inflammation, Blood, or Blood Striking.

Chap. III.—Hydrocephalus, Hurdy, Goggles, Staggers, Turnsick, &c.

On the Diseases of Dogs and Swine.

Chapter I.—Distemper, Worms, Madness, or Hydrophobia, Mange Canker in the Ears, &c.

Chap. II.—Observations on the Diseases of Swine.

To conclude with remarks and observations on the parturition of the Mare, the Cow, and Sheep, with the attention and medicine necessary for their relief in preternatural presentation.